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TOTAL GASTRECTOMY FOR CANCER OF THE STOMACH*

A Case Report

BY HOWARD M. CLUTE, M.D.,† AND ROBERT L. MASON, M.D.†

TOTAL gastrectomy is so infrequently undertaken and when performed is so often followed by a fatal ending that it is desirable, for the present at least, that each successful case be reported. In this way additional information may be gained as to the effects of total removal of the stomach on the production of anemia and on the specific alterations it produces in blood chemistry and on the processes of digestion. Furthermore, by such reports it is possible that the operability of certain extensive gastric cancers will be enlarged and more lesions successfully removed.

In 1929 Finney and Rienhoff[1] reviewed the literature of total gastrectomy and reported from this review a total of 67 cases. Since then Judd and Marshall[2], Stahnke[3], Flint[4] and Walters[5] have each reported a case. These, together with the case reported herewith, bring the total number of cases to 72.

The patient was an unmarried woman of 36. Her illness had begun a year before with anorexia and nausea, intermittent at first but almost constant for the succeeding eight months. She had vomited but once or twice. Occasionally there had been severe, epigastric pains, like that from a cutting instrument, made worse by taking food. She had lost twenty pounds in weight during the preceding eight months.

Physical examination revealed a hard, firm, freely movable mass six centimeters in diameter, four centimeters to the left of the midline, just below the costal border. Except for slight pallor and evidence of weight loss, the physical findings were not otherwise significant. The hemoglobin was 85 (Tallqvist), the erythrocytes 4,140,000, leucocytes 8,600. The smear showed normal red cells and the differential count was normal. Gastric analysis one hour after an Ewald meal revealed no free hydrochloric acid; the total acidity was 5, the non-protein nitrogen was 24 mg. per 100 c.c., the bilirubin .3 mg. and the Wassermann test was negative. There was no gross or occult blood in the stools. Fluoroscopy and film examination of the stomach showed it to be of normal size. There was, however, evidence of pressure on the greater curvature and a deformity suggesting a lesion of the wall of the stomach, not encroaching, however, upon the lumen. Based on these findings, a diagnosis of carcinoma of the stomach was made and on September 14, 1929 the patient was operated upon. The operation note follows:

Spinal anesthesia. Midline epigastric incision. The upper two-thirds of the greater curvature of the stomach was involved in a leathery indurated process. The involved area was about five inches in length and extended upward on the anterior and posterior surfaces of the stomach for about three inches. There were no palpable metastases in the liver. There were a few bean sized glands along the greater curvature, below the growth. Resection was decided upon. The duodenum was divided at the pylorus and the duodenal stump inverted by two rows of sutures. The stomach mobilized well above the growth. In order to do this it was necessary to carry the dissection above the cardia. A loop of jejunum was then brought up through the transverse mesocolon and anastomosed to the esophagus, using the stomach as a retractor until the posterior row of sutures had been placed. The entire stomach was removed and the anastomosis of esophagus to jejunum completed. A lateral anastomosis was then done between the afferent and efferent loops of jejunum and the opening in the mesocolon closed around the jejunum.

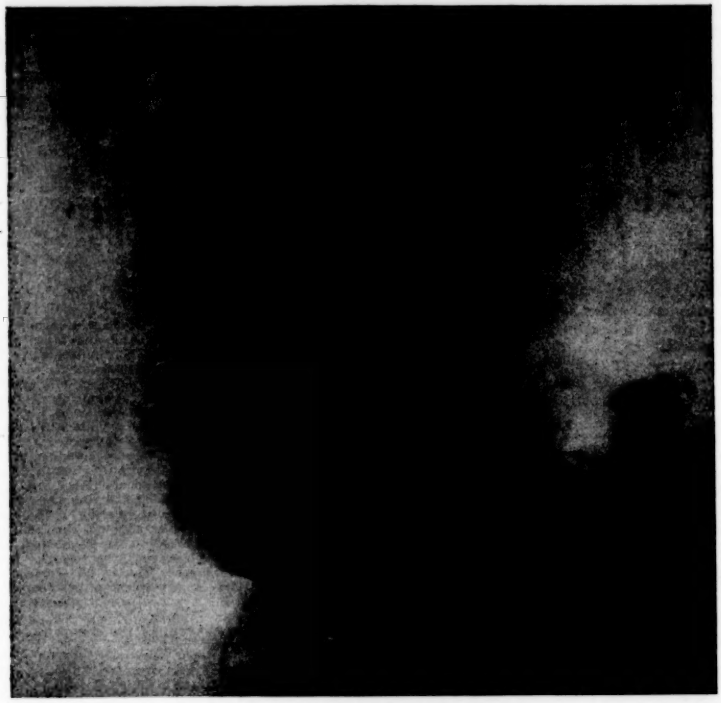
The pathological report by Dr. Shields Warren is as follows: "Stomach 23 cms. long with esophageal opening present. Situated on the greater curvature and almost completely surrounding the lumen is a mass measuring 14 cms. in diameter; 1 to 1.5 cm. in thickness. The mucosal surface is rough, irregular, and markedly injected, with a depressed center and raised, irregular border. Section reveals firm, inelastic, pale, pearly white to pale gray surface with numerous moderately lobulated follicles. Several small lymph nodes in adjacent fatty tissue. Microscopic diagnosis: Colloid carcinoma. Metastases to lymph nodes.

The operative recovery was uneventful. Food and liquids were withheld by mouth for the first four days, the fluid intake being maintained by the intravenous administration of 1000 c.c. of saline with 100 grams of glucose twice daily. Fluids by mouth were given on the fifth day and by the twelfth day the patient was taking a soft solid diet without difficulty. She was discharged from the hospital on the twenty-second postoperative day.

We next saw the patient four weeks after her discharge from the hospital or seven weeks after the operation. Clinically she felt well. She had gained twelve pounds in weight and she had a good appetite. At our suggestion she ate five small meals daily. For some time after the operation she had been troubled with numerous watery bowel movements every day. This diarrhea, however, was apparently controlled by the administration of fifteen drops of dilute hydrochloric acid three times a day. She had one complaint that was particularly troublesome

*Read at the Clinic of the New England Surgical Society, Deaconess Hospital, Boston, September 26, 1930.
From the Lahey Clinic, Boston, Mass.

†Clute—Surgeon, Lahey Clinic. Mason—Surgeon, Lahey Clinic. For records and addresses of authors see "This Week's Issue", page 947.



X-RAY PLATE I. X-ray of stomach before gastrectomy. Note the marked deformity of the greater curvature of the stomach suggesting a lesion of the wall of the stomach. Note that the pyloric end of the stomach seems free and not involved in the tumor.

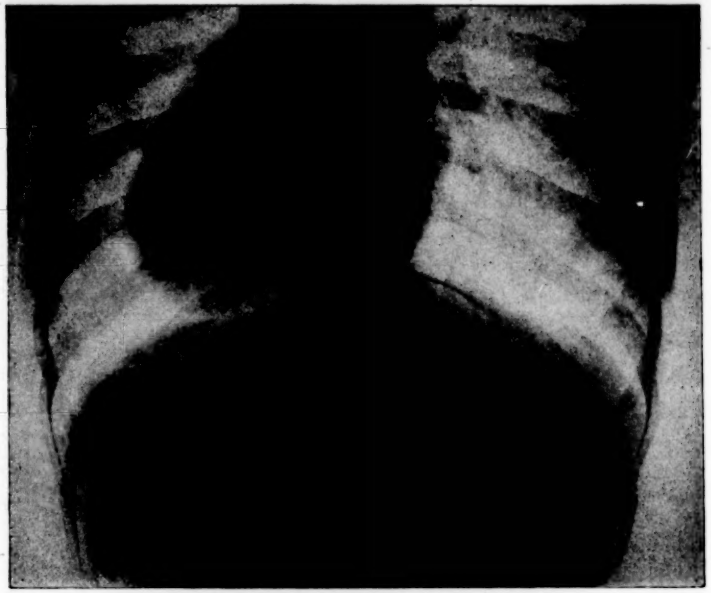
and that was soreness of her tongue and of the insides of her cheeks on each side.

A bismuth meal was given. Fluoroscopy showed the barium to pass through the esophagus directly into the jejunum which was seen to be continuous with the esophagus.

The tongue and the inner sides of each cheek showed a number of raised, red, smooth glistening areas varying in size from 3 mm. to 1 cm. in diameter. Examination of the blood showed 3,050,000 erythrocytes. Hemoglobin (Tallqvist) 65. The red cells showed slight variation in size and there was a tendency toward large well filled cells. There was an occasional stippled cell. The reticulocytes numbered 2%. It was felt that the smear was not typical of pernicious anemia but a liver diet was prescribed and one week later, the erythrocytes numbered 3,400,000 and the hemoglobin 65%. The reticulocytes remained unchanged, 2%. The glossitis, however, was very much improved so that she now could eat with comfort and felt much stronger. A month later the red cell count was 2,710,000 and the hemoglobin 65%. The glossitis, however, was no longer present and the patient felt well generally. Two months later, having kept to the liver diet, the red count had risen to 4,780,000 and the hemoglobin to 80%.

TABLE I

	R. B. C.	Hgbn.	W. B. C.	Smear
Aug. 31, 1929	4,140,000	85	8,600	Normal
Sept. 14, 1929	Total Gastrectomy			
Nov. 9, 1929	3,050,000	65		Tendency toward large well filled cells. Reticulocytes 2%
Nov. 16, 1929	3,400,000	65		Unchanged
Dec. 17, 1929	2,710,000	65		
Jan. 15, 1930	4,780,000	80		Normal
June 27, 1930	3,120,000	70	6,000	Normal
Sept. 23, 1930	3,250,000	85		Normal



X-RAY PLATE II. Barium given by mouth two months after total gastrectomy. Note the slight dilatation of the esophagus at its junction with the jejunum. Note the furry outline of the curve of the jejunum where it meets the esophagus.

She was next seen ten months after the operation. The red count was then 3,120,000 and the hemoglobin 70%. The smear showed normal appearing red cells. The patient stated that she felt well in every way. She had reduced the number of meals from five to three per day and took adequate portions at each meal. She no longer took the hydrochloric acid and suffered no discomfort upon its withdrawal. She had continued to include liver in her diet at least once a day. There was no evidence, now, of glossitis. Her weight was 93 pounds, a gain of fifteen pounds since the operation. Today—September 26, 1930—a year after operation the patient appears well. She is working regularly, has a good appetite and no complaints.

For many years the constant and practically complete absence of hydrochloric acid and of pepsin in the gastric contents has been noted in pernicious anemia. Castle[6] has recently investigated this problem in a very thorough manner and from his findings has developed an hypothesis which holds "that the development of the disease (pernicious anemia) is dependent upon an inadequate gastric digestion of protein, thus permitting the development of a virtual deficiency in the face of a diet adequate for the normal man".

Patients with complete gastrectomy are consequently of considerable interest with regard to the effect of the complete withdrawal of the products of gastric secretion from the digestive process. The development of an anemia following gastric resection, both total and subtotal, has been commented upon by many authors. Gordon-Taylor[7] in a review of 52 cases of partial gastric resection found 44% to have a definite anemia although none were of the pernicious type. Of the total gastrectomies, three cases, those of Mayo[8], Moynihan[9] and Dennig[10] had undoubted pernicious anemia. In Dennig's case, the anemia was accompanied by cord symptoms and occurred ten years after complete extirpation of the stomach for a large ulcer.

In our case a definite anemia manifested itself soon after operation and has persisted despite liver feeding. So far, it does not appear to be of the pernicious type.

Many writers have commented on the occurrence of glossitis following subtotal gastrectomy. From their reports, it would appear to bear no definite relation to the anemia and yet it would appear more than a coincidence that the glossitis and sore mouth in this patient disappeared within less than a week after liver feeding had begun.

Alkalosis is known to develop following the loss of hydrochloric acid from the stomach by

X-RAY PLATE III. Pictures taken of patient having total gastrectomy one year after operation. Note that in this interval there has occurred no evidence of dilatation of the jejunum at its anastomosis with the esophagus.

vomiting or from a gastric fistula. In complete gastrectomy, however, while no hydrochloric acid is elaborated in the stomach, there is no loss of chloride from the body and one would not expect an alteration in the acid base balance with the production of an alkalosis. This has held true in our case. In Table II are tabulated the CO_2 combining power and the concentration of chlorides in the blood. They are within normal limits. In Table III is shown the total base and its constituents. It is known that with secretion of gastric juice, the reaction of the urine tends to become more alkaline.

TABLE II

	11-15-29 2 mos. postop.	1-30-30 18 wks. postop.
Blood chloride	578 mg. per 100 cc.	615 mg.
CO_2 Combining Power	58 Vol. %	61.3%

After total gastrectomy there is no marked change in the blood chlorides or the CO_2 combining power of the blood.

With the absence of acid secretion in the stomach one would expect some alteration in this phenomenon. Hubbard[11] in a series of normal cases, found a consistently increased alkalinity in normal individuals during the 1-2, and 2-2½ hour periods following a meal. In patients with achlorhydria, the characteristic shift toward alkalinity did not occur in specimens taken at hourly periods for five hours. In our case, the hydrogen ion concentration of the urine taken before and one and a half hours after a meal shows scarcely any variation and shows no evidence of the alkaline tide that occurs in the normal individual following gastric digestion. (Table IV.) Walter's patient showed a similar disturbance of the acid base balance.

TABLE IV

	Fasting	1½ hr. p. c.
Ph of urine	5.9	6.0
Ph of blood	7.37	7.35

The hydrogen ion concentration of the urine in a patient having a total gastrectomy shows no change of note after food taking.

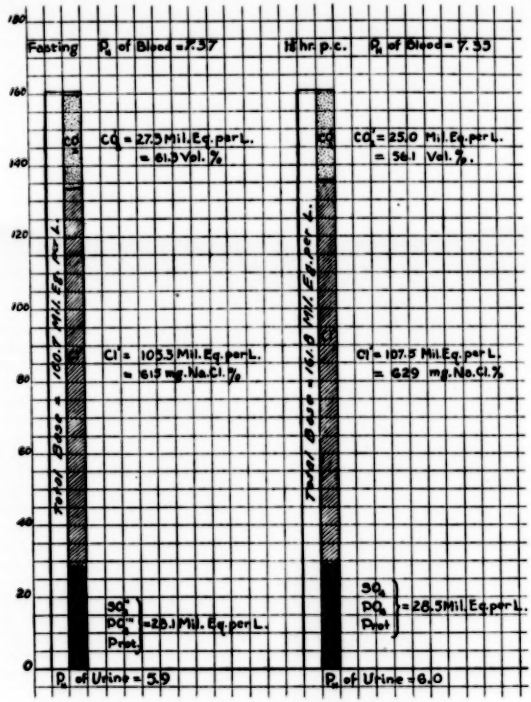


TABLE III—By Dr. Everett Kiefer.

The influence of food ingestion on the acid base balance of the blood in total gastrectomy. Note that there is no alkaline tide after eating, the Ph, the CO2, the chlorides and other acid radicles being unaltered.

SUMMARY

A successful case of total gastrectomy for extensive colloid carcinoma of the stomach is reported. The patient developed a moderately severe anemia subsequently which was accompanied by glossitis. Following the administration of a liver diet, the glossitis disappeared and the anemia improved. Studies of the blood chemistry showed no tendency to alkalosis, the hydrogen ion concentration of the blood, the blood chlorides and the CO_2 combining power being normal. A single observation of the hydrogen ion concentration of the urine before and after a meal fails to show the characteristic shift toward alkalinity.

The clinical results of the operation in this case have been so satisfactory as to render the serious risk well worth consideration in carefully chosen cases since a successful outcome gives months or years of comfort.

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FIFTY YEARS OF THE BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY*

BY HENRY R. VIETS, M.D.‡

BY a queer turn of fortune one of the younger members of this Society, barely past the Oslerian 'fixed period' of 'comparative usefulness'. has been asked—for this evening at least—to assume the reminiscent and almost patriarchal rôle of historian. I have cautiously noted that my predecessor in this endeavor, Walter Channing, who traveled along the same funambulatory track, was fifteen years my senior when he read, so brilliantly, a paper at the Society's twenty-fifth birthday in 1905†,—and he continued to so do at the thirtieth (1910), the thirty-fifth (1915) and, a year before his death, at the fortieth (1920) anniversary. Channing, moreover, had a great advantage over the present incumbent in the historical chair for he was the father of the Society, nursed it through its early, frail years, watched it grow into lusty adolescence and saw it attain respectable middle-age at forty. To Walter Channing, therefore, all praise—for he kept the records, so important to the future historian!

1880-1905

Channing tells us that the Society had a rather Sherlock Holmes-Watsonian beginning for on a 'cold, inclement day in January, 1880', nine Boston alienists—the word psychiatrist had not then come into use—met at the home of George F. Jelly, 'the grand old man of our alienists'. Channing was obviously the leader; T. W. Fisher and Edward Cowles, close seconds. That day a journal and social club was formed with an impressive title, the 'Boston Medico-Psychological Society' and it was decided, a few meetings later, to take a *new* medical magazine, the *Journal of Nervous and Mental Disease* (founded in 1876)†. The social aspect of the club was considered most important by the founders and Channing says, in 1905:

"The history of this society proves that the cockles of the heart must be warmed by food, as well as the cells of the brain stimulated by scientific pabulum. An empty stomach and full brain will not bind men together in friendship for any length of time, and he hopes the experience of the past twenty-five years will have a potent influence upon what may be done during the coming twenty-five years. The physician must not only know himself, but his brother as well if he is to get the finest and best there is in professional life, a truth I fear we only half realize in our staid Boston medical societies."

This group, at least, refused to be 'staid' after the scientific program and the idea implanted by Channing, that 'its meetings should be informal and social', has lasted the fifty years of the Society's existence, thanks largely, in later—and earlier years—to Walton, who, on one occasion, in 1923, when he could not sing *The Manic Muse*, because there was no music, read the verses 'to the great delight of his audience'.

The Society nearly expired by the end of 1881, when only six members attended a meeting, and its scientific activities were transferred, for a brief interval, to the newly-formed Psychological Section of the Suffolk District Medical Society, the Medico-Psychological retaining its function as a book club only. These were dark days, but the Psychological Section expired first, after one meeting, and this Society kept on. At the end of ten years, in 1891, it was thoroughly reorganized, partly due to the efforts of the neurologists, Knapp (elected in 1885) and J. J. Putnam (elected in 1888). Walter Channing was chosen the first president and the name was changed to the present one, with the neurological addition, in recognition of a newly developing field of nervous diseases. From this point on the Society grew rapidly to sixty members in 1905 and to nearly double that number now.

Channing, in 1905, reviewed the scientific contributions for the first 25 years and it is unnecessary for me to recall to the older men the psychiatric work of J. B. Ayer, Sr., H. R. Stedman, S. G. Webber, G. F. Jelly, T. W. Fisher, Edward Cowles, and that, more neurological in character, of P. C. Knapp and J. J. Putnam. Some of those present tonight, too, appear in the first quarter-century period,—G. L. Walton, J. J. Thomas, E. W. Taylor, W. E. Paul, E. S. Abbott and E. B. Lane.

1905-1930

The last twenty-five years, of which it is my special province to speak, covers a period of considerable activity of the Society. I can only touch at a few chronological way-stations—bits of importance *to us*, and perhaps to the rest of the world. The twenty-fifth anniversary was held at the Union Club, in 1905, with G. Alden Blumer in the chair. Charles K. Mills came from Philadelphia; Bernard Sachs and Joseph Collins from New York*.

During the next five years (1905-1910) the minutes report a long series of papers read before the Society. A few may be recalled: G. A.

*Read at the fiftieth anniversary dinner, Longwood Cricket Club, Chestnut Hill, Mass., October 16, 1930.

†Channing refers to it, with the true instinct of an alienist, as the *Journal of Mental and Nervous Diseases*, a slip of the pen of some interest, showing the essential trend of the time.

‡Viets—Instructor in Neurology, Harvard Medical School. For record and address of author see "This Week's Issue", page 947.

*Boston Med. and Surg. Jour., 152:115, 1905.

Blumer on the 'Coming of Psychasthenia' (1905); E. W. Taylor, 'Adiposis Dolorosa' (1905); Charles Mercier of London, 'Continuous Amnesia' (1905); E. E. Southard (his first presentation, having been elected the year before, and the beginning of a long series of papers read in subsequent years until his untimely death in 1920), 'Cerebral Seizures' (1906); Morton Prince, 'Hysteria from the Point of View of Multiple Personality' (1906); Adolf Meyer of New York, the 'Relation of Psychogenic Disorders to Deterioration' (1906); H. S. Frenkel of Berlin, 'Motor Reëducation in Tabetic Ataxia' (1906); P. C. Knapp, 'General Paralysis as a Menace to Public Safety in Transportation' (1907); Putnam-Southard, 'A Case of Syphilis of the Central Nervous System' (1907); E. W. Taylor, 'The Attitude of the Medical Profession Towards the Psychotherapeutic Movement' (1907); F. K. Hallock, 'The Educational Method in Nervous Invalidism' (1908); and Edwin Katzenellenbogen, 'The Psychopathic Personality' (1909).

During the same period, also, the Society took an active part in influencing legislation, its members gave popular lectures on insanity at the Harvard Medical School (1907-8), advised the transportation companies of the danger of employing workmen suffering from general paralysis, sent E. E. Southard to the International Congress of Neurology, Psychiatry, and Psychology held at Amsterdam (1907), stimulated the agitation for the Boston Psychopathic Hospital (opened in 1912) and passed a vote endorsing the action of the conscientious Secretary, W. E. Paul, in regard to the old record books of the Society: 'they were to be tied in a package of *brown paper* . . . for deposit in one of the vaults of the Boston Medical Library' (1906)*.

The Society was thirty years of age in 1910, and the anniversary was fittingly observed by a dinner at the Hotel Vendome, H. C. Baldwin acting as toastmaster. Channing must have felt the 'beneficial relaxation of social intercourse', which he advocated so strongly in 1880, for he continued the history of the Society in a pleasant vein and saw to it that the meeting was enlivened by the wit of Walton, Courtney and Southard.

Important papers read before the Society from 1910 to 1915 included: J. J. Putnam, 'Studies in Psychoanalysis' (1910), then a new subject; F. H. Verhoeff, a guest, 'Neuropathic Keratitis' (1911); W. B. Swift, 'Demonstration of a Dog with Both Temporal Lobes Extirpated' (1911); W. E. Fernald, 'Defective Delinquent Classes' (1911); E. E. Southard, 'Psychiatric Social Service' (1911); a symposium on the 'Wassermann Test' by Lucas and Southard (1912), a test just coming into use; J. J. Putnam, 'Report of the Psychoanalytical Congress' held in Weimar in 1911 (1912); E. W. Taylor, 'Brain Tumor Statistics, based on the Analysis of One Hundred Cases' (1912); P. C. Knapp, 'Successful Removal of Spinal Cord Tumors' (1913); J. B. Ayer, 'A Case of Tabes Treated by Intraspinal Salvarsanized Serum' (1913), an early report of this method of treating neurosyphilis; and a number of reports from the Psychopathic Hospital by H. M. Adler, E. E. Southard and others.

The Society discussed, at various intervals, the subject of expert testimony and held a joint meeting, in 1912, with the American Institute of Criminal Law and Criminology, at which Professor Roscoe Pound of the Harvard Law School took part. Conferences were held, also, regarding the newly-formed Industrial Accident Board 'to discuss the matter of the reasonable allowance of fees and compensation for medical and hospital services under the Workman's Compensation Act'. In addition, P. C. Knapp and others were actively engaged with committees of the Massachusetts legislature regarding the creation of a Board of Insanity.

In 1915, a thirty-fifth anniversary banquet was held at the Harvard Club with H. B. Howard as toastmaster. Dr. Blumer reviewed his thirty-five years as a psychiatrist and Walter Channing gave the usual summary of the last five years' accomplishments of the Society. Other speakers included Dr. Russel of Montreal, Edward Cowles and Morton Prince. Dr. Walton gave an impersonation of someone; the record is lacking in detail.

During 1915-1920 many worthy communications were presented at the various meetings. P. C. Knapp spoke on 'Criminal Responsibility' (1915), a subject in which he had taken a great deal of interest. Reports continued to come in regularly from the new and active Psychopathic Hospital by E. E. Southard, H. C. Solomon and others; F. E. Williams came from New York to discuss 'Mental Hygiene' (1915); Morton Prince, straight from an observational war-time tour of France with the British Medical Service, gave a paper on 'Types of Psychoses Which Have Resulted from Modern Methods of Warfare' (1915). Other papers include: Harvey Cushing, 'Observations on a Familial Deformity of the Hands Which Follows Mendelian Laws' (1915); H. M. Adler on 'Psychiatric Work in the Study of Juvenile Delinquency' (1915); E. E. Southard gave the first of his Waverley Anatomical Research Series (1916); Abraham Myerson, 'Psychiatric Family Studies' (1916); a poliomyelitis symposium, after the severe epidemic of 1916, by Mark W. Richardson, Francis W. Peabody, E. W. Taylor and E. H. Place; W. E. Fernald continued his reports on 'Mental Deficiency' (1917); and, at a meeting with the New England Ophthalmological Society, Joseph Collins and Mark J. Schoenberg spoke on 'Syphilis of the Eye' (1917). This

*In 1930, the equally conscientious Secretary, Tracy J. Putnam, brought them to me for inspection, 'tied in a package of brown paper'.

was the first of many combined clinical meetings, instigated by J. B. Ayer. In November 1917, many members were in local active service and a report, therefore, was soon forthcoming on the mental and neurological examination of recruits by D. A. Thom, J. W. Courtney, Abraham Myerson and J. V. May. Further papers were by T. A. Hoch on 'Cerebrospinal Meningitis Successfully Treated by Intraspinal and Intraventricular Injections' (1917), an early report on the intraventricular method; Abraham Myerson on the 'Neurosis of the Housewife' (1918), a subject later expanded into book form; E. E. Southard, a characteristic contribution entitled 'Pessimists, Psychopathic and Non-psychopathic' (1919), in which Freud played the part of a pessimist; C. A. McDonald, an early paper on a new disease, 'Encephalitis Lethargica' (1919); another symposium by members returning from active service, Mixter, Ruggles, Stearns, Thom and Thomas (1919); and J. B. Ayer, 'Puncture of the Cisterna Magna in Meningeal Block' (1919), a new procedure first reported in detail before this Society. These were years colored by a severe epidemic of poliomyelitis (1916), our War experience (1917-1918) and a new disease, encephalitis lethargica. Our members were keenly alive to all three catastrophies, as reflected in the programs of the period.

The fortieth anniversary was celebrated at the Harvard Club in 1920, Walter Channing again reporting five more years of progress. Walter Timme of New York addressed the Society on 'Some Endocrinological Aspects of Neurology', while E. E. Southard read a delightful, brilliant paper—his last contribution—on the 'Modern Specialist in Unrest'. George Waterman presided and F. K. Hallock did not let the opportunity pass to note that the death of John Barleycorn synchronized with the date of the meeting.

The late effects of the War continued to interest the members and a symposium on 'Spinal Cord Injuries' was given by H. C. Solomon, Stanley Cobb and others (1920); W. J. Mixter reported on 'Pneumoventriculography' (1920); W. E. Paul and C. A. Porter, on 'Peripheral Nerve Injuries Treated at the Massachusetts General Hospital' (1921); Morton Prince on an 'Experimental Study of the Mechanism of Hallucinations' (1922); H. C. Solomon on 'Tryparsamide in Cases of Neurosyphilis' (1923); J. B. Ayer and W. J. Mixter on 'Lipiodol Injections into the Subarachnoid Space' (1923); Abraham Myerson on 'Inheritance of Mental Disease' (1924); William Healy and K. M. Bowman, the 'Loeb-Leopold Case' (1924); Frank Fremont-Smith and J. S. Hodgson 'Combined Ventricular and Lumbar Puncture' (1924), a new method of localizing cerebellar tumors; Bronson Crothers on 'Sympathetic Ramisection' (1924); Donald Munro, 'Therapeutic Value of Lumbar Puncture in Head Injuries' (1925); H. C. Solomon, the 'Intensive and Long-continued Treatment of Patients with Neurosyphilis' (1915) and 'Malarial Inoculations for General Paresis' (1925); Frank Fremont-Smith, the 'Nature of the Cerebrospinal Fluid' (1926), with discussion by L. J. Henderson and others; and William Healy on the 'Science of Psychoanalysis' (1928).

The ten years just passed have been characterized, not only by the excellent and timely papers read, but by the number of combined and hospital meetings, and the distinguished group of visitors who have appeared before the Society. A number of meetings were held at the Peter Bent Brigham Hospital, the Massachusetts General Hospital, the Psychopathic Hospital and the Children's Hospital. The guests of the Society included, in addition to those mentioned, H. C. Naffziger of San Francisco (1923), A. S. Taylor of New York (1924), Wolfgang Koehler of Berlin (1925), Barend Brouwer of Amsterdam (1926), Alfred Adler of Vienna (1927), Leonard Seif of Munich (1927), Otto Rank of Paris (1928), Fritz Wittels (1929), Walter Spielmeyer (1929) and others.

The historian, however, is supposed to be prophetic as well as reminiscent, with a sort of astrological, Jerome Cardanian brain able to peer into the future. What lies before us, say, in the next twenty-five years? The trends of the times are obvious; whether these pathways we now tread shall lead to blind pockets or to the glorious hilltops, only the 'divinity that shapes our ends, rough-hew them how we will', can tell. Great advances, for instance, like Banting's discovery of insulin, flare up in unexpected places; many flares, however, prove to be the flash of a skyrocket only, soaring to great heights, to flicker out quickly and ignominiously—at least, so history seems to teach. This Society may be the means of spreading the knowledge of a brilliant discovery, in the next twenty-five years, but the great mass of medical thought is ground out slowly in societies like ours, a constant functional outpouring of a good average product,—and such should be our hope for the future. No epoch-making contribution, no world settling—or unsettling—theories, no outstanding researches,—so I read the last twenty-five years. A high level maintained, a quick perception of the psychiatric and neurological world about us, a center for New England thought in diseases of the nervous system, —that is what we have been in the past, and such is our future, so far as my horoscopic divination informs me.

Additional Notes*

Presidents (1905-1930)

1906, G. T. Tuttle; 1907, W. N. Bullard; 1908, C. W. Page; 1909, H. C. Baldwin; 1910, W. E. Fernald; 1911, J. J. Thomas; 1912, E. V. Scrib-

*A continuation of the list published by Walter Channing in the *Boston Med. and Surg. Jour.*, 152:387, 1905.

ner; 1913, E. W. Taylor; 1914, H. B. Howard; 1915, W. E. Paul; 1916, E. B. Lane; 1917, J. W. Courtney; 1918, C. G. Dewey; 1919, G. A. Waterman; 1920, E. E. Southard; 1920, Everett Flood; 1921, J. B. Ayer; 1922, F. H. Packard; 1923, F. K. Hallock; 1924, C. M. Campbell; 1925, William Healy; 1926, Donald Gregg; 1927, H. R. Viets; 1928, H. C. Solomon; 1929, D. J. MacPherson; 1930, E. W. Taylor.

Secretaries (1905-1930)

1904-08, W. E. Paul; 1909-12, F. H. Packard; 1913-14, D. H. Fuller; 1914-15, William Noyes; 1916-17, J. B. Ayer; 1918-25, Donald Gregg; 1926-1928, D. J. MacPherson; 1929-, Tracy J. Putnam.

Deaths (1905-1930)

To note the passing of our members, in the course of twenty-five years (1905-1930), is one of the duties of an historian. A list seems sufficient here, as more extended notice of each member has been spread upon the records and usually published in the *Boston Medical and Surgical Journal* (now the *New England Journal of Medicine*).

1905, H. P. Stearns; 1907, C. F. Folsom*; 1910, J. B. Ayer, Sr., J. H. Denny; 1911, G. F. Jelly, Eugene Kingman; 1914, T. W. Fisher*; 1915, H. C. Baldwin, William Noyes, H. W. Wood; 1916, G. H. M. Rowe*; 1917, H. P. Frost; 1918, J. J. Putnam, F. C. Richardson, E. V. Scribner; 1919, Edward Cowles*; 1920, P. C. Knapp, E. E. Southard; 1921, C. C. Beckley, Walter Channing*; 1923, C. P. Bancroft, R. T. Edes, H. B. Howard; 1924, W. E. Fernald; 1926, F. B. M. Cady, S. G. Webber; 1927, G. T. Tuttle; 1928, J. W. Courtney, H. B. Eaton; 1929, A. C. Jelly, Morton Prince.

*Founders of the Society.

REFERENCE

1 The History of the Boston Society of Psychiatry and Neurology for Twenty-Five Years, with an Appended List of Contributions. Boston Med. and Surg. Jour., 152:387, 1905.

THE PRESENT STATUS OF PEPTIC ULCER*

BY SARA M. JORDAN, M.D.†

PROGRESS in the aequisition of knowledge regarding any subject can best be measured by a survey extending back over a number of years, and by the observance of changes in theoretical and practical conceptions. In matters of medicine, criticism, especially from the laity, is frequently offered that there is a shifting of thought from one vogue to another, and that what was considered good therapeutics five years ago is discarded today, only to be resuscitated and justified in another five years. While to a certain extent such criticism may be justified when superficially considered, the underlying truth is usually that one or another factor, in a complicated group of factors, assumes greater or less significance as investigative work progresses. Another point of interest is that theories based on clinical observations are so frequently confirmed by later investigative and experimental work that there is often a revival of interest in, and emphasis upon, certain phases of therapy, when the experimental data are secured.

A review of the conceptions regarding the etiology and treatment of peptic ulcer, during the past ten years, reveals that although numerous possibilities, such as bacterial infection, vascular insufficiency caused by emboli and anemia, toxic manifestations, disturbance in nerve supply, disturbance in chemistry, and disturbance in the mechanics of the stomach have all been indicted at various times and by various schools, as the cause of ulcer, the results of Ivy's recent work shows that in animals the factors of mechanical manipulation and chemical irritation are the two chief causative agents in the production of ulcer. Under the term "mechanical manipulation" is understood the type of muscular contractions and relaxations, as well as the mechanical contact between the mucosa and the gastric contents. The chief chemical element, of course, is the hydrochloric acid with its irritative effect upon the gastric mucosa. Ivy has recently stated that a gastric mucosa rubbed with acid bleeds more readily than one rubbed with saline. When it is remembered that both the contractions of the musculature and the secretion of acid are controlled by the nervous system, it is easy to fit the theory of neurogenic cause into the etiological picture, and when we add the factor of mechanical contact between mucosa and gastric contents, we have satisfied, directly or indirectly, most of the claims upon etiology that have been made in the past. Ivy, through some recent experimentation, has shown that the sensitivity of the mucosa also plays a part in the production of experimental ulcer—the jejunum being more sensitive to acid than the duodenum—and this factor, of course, assumes an important rôle in the production of gastro-jejunal ulcer.

Granted, then, that a chronic peptic ulcer is produced as an end result of repeatedly spastic muscle contraction in the stomach, which, in turn, is associated with high secretion of hydrochloric acid, and both of which may be caused by increased nervous tension, the appropriate forms of therapy are immediately suggested. The increased nervous tension must be relaxed and its causes removed, whether they be in

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†Jordan—Gastroenterologist, Lahey Clinic. For record and address of author see "This Week's Issue", page 947.

the external environment or are the effect of toxins upon the nervous system. Rest must be procured for the stomach, both that secondary to general rest and local relaxation of the gastric musculature by the release of spasm, and by the use of a liquid and bland diet which necessitates less work for the stomach. The high secretion of acid which is associated with the spastic condition in the musculature must be controlled by neutralization so long as it exists so that the chemical effect of strong acid cannot reach the mucosa.

The adaptation of therapy to theoretical cause, and to cause as shown by animal experimentation, has made necessary no changes from the forms of therapy which were empirically chosen as the most effective. Sippy's splendid work, extending back more than twenty years before his death, showed, both in his hands and in those of his numerous disciples, the results anticipated from the provision for the stomach which has a chemically eroded area, with an opportunity to heal through rest and the temporary control of an excessive acidity. Other forms of therapy, such as that of Smithies, have stressed the importance of physiological rest as the fundamental necessity.

The same results, namely rest and control of acidity by neutralization, were found to be procured by surgical treatment through gastroenterostomy; and were it not for the ill effects due to mucosal susceptibility,—the fact that the jejunal mucosa, upon which the acid contents of the stomach were poured, was even more susceptible than duodenal mucosa,—this method of treatment would today still be considered with as much respect as formerly. But the dread gastro-jejunal ulcer has resulted in a careful consideration as to the real necessity for surgical treatment in every case where the patient receives conscientious and intelligent advice. A survey of the past ten years is indeed instructive from the point of view of the question of medical or surgical treatment for ulcer. Whereas, until within the past two or three years, the surgeons and the internists in various parts of the country stood their respective grounds, hurling reproaches and making exclusive claims on good results, they have now, practically without exception, acknowledged their respective failures and made only those claims which have been acknowledged generally, and by both sides, to be fair.

The question of medical treatment, of what it should consist, and what results should be expected, becomes, therefore, a very vital one, since it is rather generally agreed that it should be used before surgery is contemplated. Any form of medical treatment which gives the stomach rest and controls hyperacidity is logical. In our experience, in about 900 cases the neutralization of acid combined with rest, as elaborated by Sippy, has been most successful. Complete hospital rest for three weeks at the beginning of treatment is, in our opinion, a necessity for several reasons: first, in order that the patient may have complete relaxation during the stage of treatment when the symptoms are marked and the diet is low in calories and variety; second, that the neutralization of the hydrochloric acid may be checked up and danger of alkalosis, as well as of inadequate neutralization, avoided; third, that persistent oozing may be detected by examination of all stools for occult blood; fourth, that the progress of healing may be noted from subsidence of symptoms and check-up fluoroscopic observations; fifth, that the patient may be educated regarding the nature of chronic peptic ulcer and the necessity for following the regimen outlined; sixth, that the caloric value of his diet may be adjusted to his stature and weight. Hospitalization has also, in many cases, made it possible for those individuals to be weaned from nicotine and alcohol who would have found it much more difficult had they been carrying on their usual routine. The three weeks of observation in the hospital have also often proved valuable where the diagnosis of ulcer could not be made absolute, and in revealing complications which require attention if the patient is to be symptom free.

Inaccurate diagnosis has undoubtedly been a source of much confusion and error in the past. Too often the radiologist alone has had to bear the burden of diagnosis, and under such circumstances, errors of commission and omission are unavoidable. A certain percentage of cases of duodenal ulcer show an unmistakable defect, —incisura and niche, which can only indicate ulcer. But many failures of the duodenal bulb to fill satisfactorily are due to spasm, and many ulcers on the posterior part of the bulb are visualized only with palpation under the fluoroscopic screen and may not appear in the films. Furthermore, the obvious visualized defect of the duodenum may be the cicatrix of a healed lesion in a patient whose present symptoms are due to another cause. The gastric lesion of the lesser curvature is always readily visualized by radiography, if the patient has been so placed under the fluoroscopic screen that the niche is seen. But lesions of the posterior wall may result in deformities of contour which are made out only by the most careful fluoroscopic and film examinations.

The history of a patient with ulcer has for many years been considered a typical one; namely, that of periodic distress occurring at a certain time after meals, with food and soda relief—so typical that Mills was wont to say that if a patient were found, on physical examination, to have a can of soda in his pocket, the diagnosis of ulcer could be made at once. With increasing knowledge of gall-bladder and colon disorders, however, we can no longer be as positive and dogmatic in the matter of ulcer history. Relief of distress by the ingestion of cold food is certainly very suggestive, though even this

may occur in a case of hyperchlorhydria without ulcer. Relief from the use of warm food or drink may suggest gall-bladder disease as well as colon disorder. The use of soda as a relief measure may have no significance so far as the presence of ulcer is concerned. It is, in fact, a common finding that soda is used by a patient with an achlorhydria, as well as by those with hyperchlorhydria. The most helpful part of a history is, in our experience, an accurate description of a typical day with distress, including a list of foods eaten at each meal and an exact record of the time of occurrence and character of the distress, with the exact effect of all relief measures, such as rest, food, alkalies, or bowel movement. The results of gastric analysis after a test meal are, in the case of duodenal ulcer, very important, inasmuch as it is almost the rule that an active duodenal lesion is attended by a high free hydrochloric acid in the gastric contents. A gastric lesion, on the other hand, usually produces no rise in acid, or may even be attended by a hypo-normal acidity. The presence of occult blood in the stools, when the patient is under careful control, is indicative of an ulcerating lesion, benign or malignant, in the upper alimentary tract. Epigastric tenderness is found in about sixty per cent. of the cases. Occasionally a mass due to inflammatory reaction around an acute ulcer at the pylorus may be palpated, but this is rare in a benign ulcer. Visible peristalsis in a case with obstruction is occasionally seen. It is frequently difficult to make a positive diagnosis of ulcer in a case first seen directly after a massive hemorrhage, when one must depend almost entirely upon history, at least until the patient has recovered from his hemorrhage and all evidence of bleeding has disappeared.

On the whole, a carefully evaluated history, together with an analysis of the chemical and radiological data, are the three basic constituents for the diagnosis of ulcer. The importance of a correct diagnosis cannot be overestimated. The consignment of a patient to the necessary routine for the medical treatment of an ulcer, or to surgery, involves so much sacrifice of time and adherence to such a strict regimen that the diagnosis should be made only after careful and conscientious study. A patient with a healed duodenal ulcer and an irritable colon, the latter sometimes the result of an ulcer treatment in which large doses of magnesia have been used, is often thought to have a recurrence of his ulcer symptoms, and it is only by a careful evaluation of all data that the real condition may be diagnosed.

In addition to the difficulty of deciding whether an actual and active duodenal ulcer is present, there is, in the diagnosis of ulcer, a still greater difficulty, one which involves the patient's safety to a much greater degree; namely, the distinction which must be made in the case of the gastric lesion between the benign and the malignant lesion. A summary of the views of the past decade on this subject is interesting.

The frequent occurrence of gastric carcinoma and the importance of early detection because of its insidious progress resulted in rather radical views regarding all gastric lesions. Until very recently, for example, it was felt necessary, at many clinics, to remove all gastric lesions because of the danger of malignancy. Now it has been demonstrated beyond doubt that a large proportion of gastric lesions have no potential malignancy and are entirely healable by medical means. At our Clinic, during the past six years, we have classified gastric lesions into frankly malignant; frankly ulcer; questionable ulcer or carcinoma;—this group resolving itself later into the malignant or benign ulcer.

Gastric lesions of all types, according to our experience, fall into three groups; about 50% of all cases being frankly malignant cases; of the other 50%, about two-thirds may be proved to be healable tractable ulcers, and the other third, one-sixth of the total group, is found to be divided between the malignant lesions and the unhealable ulcers. The cases which are not frankly malignant are put routinely upon ulcer management, and within a short period (usually within a week or ten days) they can be classified as healable and medical treatment continued, or as intractable benign ulcers, or as suspicious of malignancy. If they fall into either of the latter two classifications, they are immediately considered surgical and resection is done. The criteria upon which the decision is made and which must be fulfilled if the lesion is to be considered healable are:

1. The disappearance of the x-ray defect.
2. The subsidence of symptoms.
3. The complete disappearance of occult blood in the stools under careful control.

The commonest errors in treatment of ulcer, in our opinion, in a large group of ulcer cases coming to the Clinic, are (1) the use of too little food or too little variety in the food for the ambulatory patient; (2) the use of too much magnesia in the powders which are used for neutralization; (3) the use of larger doses of alkalies than are necessary for neutralization, with resultant alkalosis; (4) failure to forbid the use of nicotine and alcohol.

Failure of medical treatment is due usually to three causes: (1) the type of posterior wall ulcer, either gastric or duodenal, which invades the pancreas and is calloused and, therefore, not easily healable; (2) the inability of the patient to follow the necessary regimen; (3) the inability of the patient to tolerate any form of alkalies in large enough quantity for neutralization. The number of those individuals who have found it impossible to follow the regimen outlined has been almost negligible, and it has been a surprising fact that the more important the patient's occupational activities are, the more readily he

has adapted his treatment to his life, a fact possibly explained by his superior intelligence and better understanding of the situation.

Failure of what is considered adequate medical treatment has been found to be an indication for surgery in a small group of cases. The other indications for surgery are acute perforation, unrelievable obstruction, repeated massive hemorrhage, and in gastric lesions, a reasonable suspicion of malignancy as described above. Our concepts regarding obstruction have undergone very radical changes during the past few years. The theory, generally held a few years ago, that any pyloric obstruction in which there was forty-eight hour, or even twenty-four hour retention of barium, should be relieved by surgery was first deposed in our experience by a case of marked obstruction (seventy-two hour gastric retention of barium) in a very old man whose general condition did not permit even palliative surgery. To our surprise, this patient was relieved of all symptoms, including obstruction, by medical management, and has had no recurrence in the four years since that time. In this case, as in many others since that time, it has been shown by the results of treatment, that what at first seemed to be cicatricial obstruction was really due to inflammatory reaction and pyloric spasm, and was relievable by medical measures. Repeated massive hemorrhage has been a definite indication for surgery, but only for that type of surgery which removes the bleeding area, as gastro-enterostomy alone has been of no more value than medical treatment so far as the prevention of further hemorrhage is concerned.

PAY CLINICS

BY FRANK E. WING, A.B.*

A PAY CLINIC is designed to meet the needs of that large section of the population which lies between the poor, for whom medical service has long been freely given, and the rich or well-to-do, who are able to provide for themselves, at current rates, such medical attention as they require. What are the circumstances and the problems—economic as well as medical—of the clientele of such a clinic? Do they need such a clinic, and, if so, why?

As an endeavor to answer these questions, a study was made of the records of all the new patients admitted to the Evening Pay Clinics of the Boston Dispensary at two presumably typical sessions. These two evenings were selected at random, far enough back in time to make it possible to learn something of the problems and progress of each patient since his first visit. The first two working evenings of September, 1929, were selected. On these two evenings 34 new patients were admitted, each to the appropriate clinic as indicated by his major complaint—three to General Medical, two to Eye, two to Nose and Throat, four to Dental, eleven to Genito-Urinary, and twelve to Skin and Syphilis.

STUDY OF THIRTY-FOUR CASES

The records of these patients show an average age of 32 years, the oldest being 60 and the youngest, 16. Two-thirds were males; 18 were of American parentage; 21 were single; 12 had no dependents; of the others, 7 helped at home, 6 had one dependent, and the other 9 had a total of 36 dependent children ranging in number from 2 to 7 each. The average wage was $26 per week, the lowest being $10 and the highest $44.

Fourteen (41%) came because they had been advised to do so by other patients; four were referred by their family physician; one was sent by a probation officer; one by another hospital. The source of reference of the other fourteen was obscure.

Six were unemployed; seven were engaged with the care of the home; two were waitresses; two were engineers; three were painters; and each of the others worked at one of the following trades:—asphalt mixer, bundle girl, chauffeur, cloth inspector, draughtsman, driver, freight handler, moulder, salesman, seaman, steam fitter, stone worker, timekeeper, weigher.

These patients paid an initial fee of $1.60, which covers the cost of admission, the first examination, and routine laboratory work. If admitted to a specialized clinic, as, for example, Skin, Gynecology or Genito-Urinary Diseases, each patient was entitled to a "no-fee" refer to the Medical Clinic for general physical examination. On each subsequent visit, a fee of $1.00 was paid, with moderate charges for such extras as medicine, x-ray and fluoroscopic examinations, special therapies and laboratory tests. Many of these so-called "extras", if ordered during the course of private office treatment, could be secured only by consultation with, or reference to, a number of specialists in their separately maintained offices.

SUBSEQUENT FINDINGS

Study of the records seven months later brings to light some interesting and pertinent information concerning the subsequent case histories of these 34 patients, the medical problems involved, and the question as to whether the rendering of these services by the clinic was, under the circumstances, justified, with due consideration to the rights of private medical practitioners.

*Wing—Director, The Boston Dispensary. For record and address of author see "This Week's Issue", page 947.

Between the first week of last September, 1929, and the end of March, 1930, fifteen of these patients treated in the Skin Department have made 203 visits. Five of them have made one to four visits each; four have made five to eight visits each, and the other six have made seventeen, twenty-seven, twenty-eight, twenty-nine, thirty-two and thirty-three. In the Genito-Urinary Clinic, eleven patients have made 128 visits, among them being one who has made twenty; another, twenty-three; another, twenty-four; and another, thirty-eight. One patient in the Dental Clinic has made eleven, and another, fourteen visits. Seven others have made from one to five visits each in the Medical Clinic: one made two, and another six, visits in the Food Clinic; one made six visits in the Throat Clinic; another three visits to the Eye Clinic; and each of eight others made one visit to the Gynecological, the Throat, the Eye, or the Dental Clinic. Twelve were sent to the Medical Clinic from other departments for general physical examination.

The diagnoses shown on these thirty-four patients, some of whom had several pathological conditions, were:

Acne 3; dental caries 4; gonorrhea-urethritis 8; hypertension 3; obesity 2; syphilis 8; and one each of balanitis, cerumen, defective vision, deviated septum, leg ulcer, mitral stenosis, multiple lipomata, old pulmonary infection, papilloma, pregnancy, psychoneurosis, rheumatic heart disease, urticaria.

Eight required no laboratory work. Each of the twenty-six others had routine urinalysis, blood smear and Hinton test, and in addition, to date, there have been done two massage tests, one hemoglobin, one autogenous vaccine, one orthodiagram of the heart, and one dark field examination. It happens that no x-ray examinations have been ordered for this group, a rather unusual record.

The following illustration shows how a seemingly simple complaint, if adequately studied, may lead to the discovery of an obscure condition needing long treatment. One person in this group, a school teacher, with a relatively low income, was admitted to the Eye Clinic, where she was found to be in need of glasses. Sent to the Medical Clinic for routine examination, she was found to be very much overweight. Laboratory analyses of urine and blood, followed by three basal metabolism tests, disclosed the need of dietetic supervision and medication for a possible thyroid condition. These conditions have to date required 16 visits to the Medical Clinic, 23 visits to the Food Clinic, one to the Nose and Throat, and three to the Eye. At Dispensary rates this service cost her $54.00. Under private treatment, assuming that the eye specialist would have discovered the medical condition, the expenses would have been about $185.00.

Two other patients were the parents of a child under treatment at the Children's Hospital for congenital lues. The father, who had six children to support on an income of $35 a week, came to the clinic in order not to miss his work. He was found to have latent lues and a course of anti-luetic treatment was ordered. In the Medical Clinic, to which he was sent for general physical examination, he was found to have a soft, systolic heart murmur. In six months he has made 2 visits to the Medical, one to the Neurosyphilis, and 30 to the Syphilis Clinics. His treatment has required, in addition, four Hinton tests, urinalysis, blood smear, and a lumbar puncture has been advised. Examination of the mother showed latent lues, hypertension and carious teeth. Since the first few visits she has come to morning clinics and has been treated 29 times in the Syphilis Clinic; has been examined twice in the Medical Clinic, once in the Neurosyphilis, once in the Gynecological; the laboratory work has included urinalysis, blood smear, and three Hinton tests. Each of the six children has had one or more Hinton tests with negative results. Both the father and the mother are still under treatment. The cost of this work, done at minimum private rates, would have been not less than $240.00, prohibitive for the family of a man earning $35 a week. At Pay Clinic rates the charges were $96.00.

ADEQUACY OF TREATMENT

These three and each of the other 31 patients were seen and treated by competent physicians, the majority of whom have a background of years of practice in the particular specialty for which they are employed in the clinic. The treatment was adequate; not superlative but as good as would have been received had the patient gone to a similar group of men in their private offices. Furthermore this treatment was given in the evening when the patients, if working, could avail themselves of it without loss of time or wages.

The clinics are supplied with an auxiliary staff of clerks, graduate nurses, and social workers, thus freeing the staff physicians of non-essential duties and enabling them to devote their entire time and best thought to the professional duties for which they are employed.

The physicians and their assistants are paid salaries ranging from $5 to $8.50 for an average period of two and one-half hours. While these salaries are low in comparison with rates at which the physician must figure his time to cover rent, supplies, equipment and overhead in his private practice, they compare favorably with salaries paid in industrial medicine and with the net income of a large percentage of practicing physicians, if computed on the basis of an eight-hour working day, with the factors previously mentioned eliminated.

PAY CLINIC DEFINED

Long before this, it will have been recognized that we are dealing with a group of persons of limited means in need of medical services for which, if adequately supplied, they cannot afford to pay, except on a cost basis, including the payment of physicians for their work.

This, in fact, is the commonly accepted definition of a Pay Clinic, as distinct from clinics in which the service of the physician is volunteered and in which the fees paid by the patient represent only a part of the cost, with frequent cases in which the fee is entirely remitted. The latter is commonly termed a Free or Part-pay Clinic, and is not to be confused with the type of clinic which we have under consideration. Neither is the Pay Clinic to be confused with another type of clinic in which a group of physicians, each working for himself around a central admitting room, or under a co-partnership arrangement, undertakes to furnish medical service at a profit to themselves. This has come to be known as a Group Clinic, — probably the best known example of this type being the Mayo Clinic in Rochester, Minnesota.

HISTORY OF PAY CLINICS

So far as I am able to ascertain, Pay Clinics are institutions of distinctly American origin. They have developed in recent years to meet the same demands for the ambulatory patient that have been met for the hospital patient of moderate means by the pay-ward, the semi-private room, and most recently by the Baker Memorial, connected with the Massachusetts General Hospital.

It is now 17 years since the first Pay Clinic, the pioneer of its kind in this country, was established at the Boston Dispensary. Here in April, 1913, an evening Eye Clinic was opened for persons who needed more adequate service than could be rendered by opticians, and who found it impossible or difficult to pay $5 or $10 to an oculist for refraction, and $10 to $20 more for a pair of glasses.

In the following year, a Genito-Urinary and a Dermatological Clinic (chiefly for the treatment of gonorrhea and syphilis) were added. These were followed in 1916 by a Dental, and an Ear, Nose, and Throat Clinic; by a General Medical Clinic in 1917, and by a Gynecological Clinic in 1918. Last fall a Surgical Clinic was opened two evenings a week in response to a very evident demand for a clinic of this type. It proved successful from the start and is now in a flourishing condition, having added recently another evening to its schedule. The Genito-Urinary, the Skin, and the General Medical Clinics are open three evenings a week, Mondays, Wednesdays and Fridays; the others, on Mondays and Fridays only.

While this development was taking place in Boston, and before the War, pay clinics for the treatment of gonorrhea and syphilis were established at the Brooklyn Hospital, the Lakeside and Mt. Sinai Hospitals in Cleveland, and the Central Free Dispensary, attached to the Rush Medical College in Chicago. Since the War, there have been established clinics charging $1.00 or more per visit at the New York Hospital, the Babies Hospital, and the Neurological Institute, besides the now well-known Cornell Clinic, and the Vanderbilt Clinic connected with the Columbia-Presbyterian Medical Center in New York; the Harper Hospital in Detroit, the University Clinics at the University of Chicago, and similar Pay Clinics in some other cities of the United States.

FEES, INCOME AND COST

While we now think of a Pay Clinic as one in which the patients pay the entire cost, this principle was not so arbitrarily held at the outset. During the first years in which Evening Pay Clinics were operated, the management adhered more to the principle of offering an opportunity to working people of limited means to secure medical service at or near cost, without loss of time or wages, but a certain amount of experimentation was necessary to determine how high the fees would have to be to bring this about. Consequently, as might be expected, more stress was laid during the first few years on establishing the principle than on making the clinics fully self-supporting.

It will perhaps be of interest to know how the cost of these clinics over this period of 17 years has compared with the amount paid by patients for the services rendered. In other words: How nearly have the clinics come to being fully self-supporting? What element of charity has entered into their maintenance?

In an attempt to answer these questions, the expenses, receipts, and number of visits have been analyzed to bring out comparisons. It should be said here that the cost figures used include a fair share of executive supervision, business office, and building upkeep expense, in addition to direct charges for supplies and personnel. They do not include the cost of drugs and medicines purchased at the pharmacy, or the cost of x-ray and laboratory examinations.

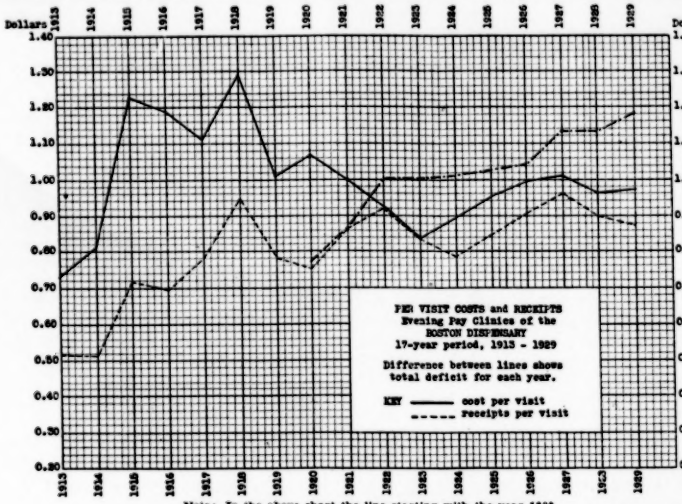
During the first eight-year period of inauguration and adjustment, under the cost definition already given, the clinics could not have been self-supporting because the established fee schedule was too low. During these years the range in cost was from 73.3 cents to $1.29 per visit, an average of $1.10. The range in receipts was from 52 cents to 94.5 cents per visit, an average of 77 cents.

The clinic started to operate on a fee schedule of $1.00 for the first and 50 cents for each subsequent visit and continued on this basis until August, 1917, when the charges for subsequent visits were raised to 75 cents. In 1920, with

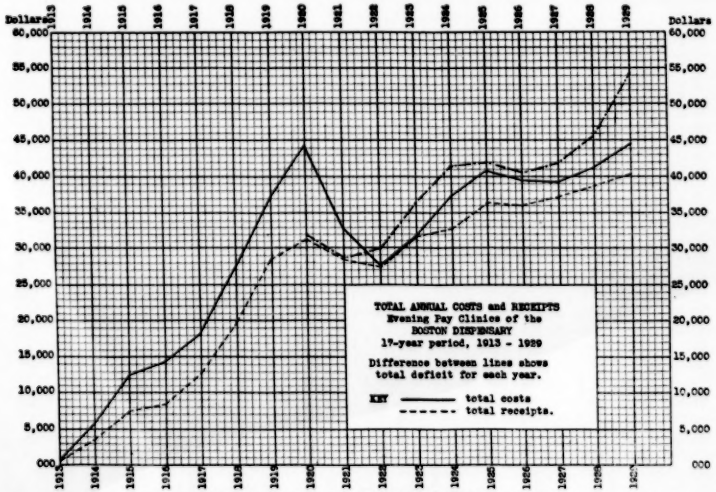
ATTENDANCE, COSTS, AND RECEIPTS OF EVENING PAY CLINICS AT THE BOSTON DISPENSARY FOR THE 17-YEAR PERIOD, 1913 TO 1929 INCLUSIVE

	1913	1914	1915	1916	1917	1918	1919	1920	1921
Clinic Visits									
Eye	1,185	1,664	1,375	1,294	1,119	1,153	1,309	2,059	1,860
Genito-Urinary	——	5,123	8,235	8,195	11,506	12,550	20,107	19,918	12,448
Dermatological	——	257	555	1,671	2,225	4,611	10,121	12,956	12,592
Dental	——	——	——	546	——	——	——	177	198
Throat	——	——	——	258	1,316	1,389	1,578	1,796	1,393
Medical	——	——	——	——	226	802	1,127	2,365	1,544
Gynecological	——	——	——	——	——	630	2,391	2,111	1,586
Surgical	——	——	——	——	——	——	——	——	——
Total Visits	1,185	7,044	10,165	12,064	16,392	21,135	36,633	41,382	32,871
Total Receipts	$613.69	$3,628.07	$7,313.02	$8,407.99	$12,793.47	$19,878.63	$28,556.86	$31,063.68	$28,362.63
Total Expense (with overhead)	$868.70	$5,729.35	$12,549.67	$14,342.41	$18,293.38	$27,365.87	$37,156.69	$44,221.82	$32,938.72
Receipts Per Visit	$0.518	$0.515	$0.719	$0.696	$0.78	$0.945	$0.78	$0.751	$0.863
Cost Per Visit	$0.733	$0.813	$1.23	$1.19	$1.11	$1.29	$1.01	$1.07	$1.00
Per Cent. Free (based on deficit)	29.3%	36.6%	41.5%	41.5%	20.7%	26.7%	22.7%	30%	13.7%

	1922	1923	1924	1925	1926	1927	1928	1929
Clinic Visits								
Eye	1,052	1,373	726	697	714	629	698	829
Genito-Urinary	12,505	16,452	17,991	19,976	18,166	18,040	18,409	17,730
Dermatological	12,789	14,607	16,548	16,331	14,532	12,706	15,265	17,192
Dental	——	——	——	——	575	1,562	1,850	2,171
Throat	720	894	811	768	883	910	889	1,124
Medical	1,507	3,371	4,029	3,311	3,364	3,594	4,094	4,675
Gynecological	1,221	1,275	1,681	1,971	1,556	1,351	1,708	1,935
Surgical	——	——	——	——	——	——	——	267
Total Visits	29,794	37,972	41,786	43,054	39,790	38,792	42,913	45,923
Total Receipts	$27,412.15	$31,827.55	$32,843.60	$36,464.20	$36,608.20	$37,219.60	$38,670.51	$40,312.00
Total Expense (with overhead)	$27,613.48	$31,872.87	$37,332.34	$40,928.32	$39,464.97	$39,343.47	$41,222.85	$44,542.10
Receipts Per Visit	$0.92	$0.838	$0.786	$0.846	$0.905	$0.96	$0.901	$0.877
Cost Per Visit	$0.927	$0.839	$0.893	$0.95	$0.992	$1.01	$0.96	$0.97
Per Cent. Free (based on deficit)	0.75%	——	12%	11%	8.7%	5%	6.1%	9.6%



Note: In the above chart the line starting with the year 1920 represents the *amounts per visit* that would have been received had all patients paid full fees. Figures are not available for similar comparisons in previous years.



Note: In the above chart the line starting with the year 1920 represents the *total amounts* that would have been received had all patients paid full fees. Figures are not available for similar comparisons in previous years.

41,382 visits, there was still a deficit of 30%, representing a corresponding amount of free work. During this year the average per visit cost was $1.07, and the average per visit receipts 75.1 cents.

To offset this deficit in the future, fees were

raised in November, 1921, to $1.00 per visit for all visits. During that year, by certain economies of administration but without lowering the salaries of physicians, the cost was reduced to exactly $1.00 per visit. Had the $1.00 fee been in force during the entire year, the clinics would have broken even.

In the eight years since 1921, the cost has only once exceeded $1.00 per visit, the exception being in 1927 when it was $1.01, the cost range being from that amount down to 84 cents, with an average cost of 94.5 cents and average receipts of 87.7 cents per visit. In 1922 and 1923 the income did actually meet the expense. During these two years the clinics were actually self-supporting. They would have shown a surplus of $2,000 and $6,000, respectively, had fees remitted not exactly equalled these amounts. These two years may be said to have been the most successful from the standpoint of striking a balance between fees remitted and fee collected. In no year has there been an apparent surplus.

Before the end of 1924, so many patients were being treated at less than the $1.00 fee that it was again evident that expenses were not going to be met. It was therefore decided to advance the rate for first visit to $1.60, this to include a free physical examination in the Medical Clinic and routine laboratory examination of urine and blood, with the fee for subsequent visits remaining as heretofore at $1.00. In December, 1926, flat charges of $1.60 per visit were established for all patients receiving anti-luetic treatments, but these slight increases have not yet been sufficient to offset the amount represented by fees wholly or in part remitted. Last year, 1929, showed average receipts of 87.7 cents per visit; an average cost of 97 cents; a net deficit of 9.6%. If fees had been collected last year from all patients to the full amount, according to the fee schedule in force, there would have been a surplus of approximately $10,000.

AVERAGE PER VISIT COST NOT THE SAME FOR ALL CLINICS

One should not draw the conclusion that because the Boston Dispensary can maintain Pay Clinics at a cost around $1.00 per visit, this can be done in any one specialty or in general medicine at the same rate. It must be remembered that this figure is obtained by averaging a large number of visits made by patients in six or eight specialties, with widely varying numbers of visits to each specialty. Patients can be seen much more rapidly in some clinics than in others. For example, a first examination in the Medical Clinic requires from twenty minutes to three-quarters of an hour, while in the Genito-Urinary Clinic six minutes of the doctor's time per patient is more nearly common practice. (The great majority of these are old patients coming for a routine treatment.) In the Medical Clinic the doctor himself does most of the time-consuming work of examination, including the taking of the history, while the number of patients he can see in the same length of time in the Syphilis Clinic may be multiplied by two or three through the use of trained nurse-technicians working under his supervision. So it is important to take into account the particular kind of service to be offered before one can safely say how high or how low the fees must be fixed in order to cover the cost.

For several years we have made careful studies into the cost per visit of treating patients in each of the various clinics and we find that the cost is around $2.30 for a patient in the Medical Clinic as compared with 60 cents per visit in the Genito-Urinary Clinic; 90 cents in Skin and Syphilis, and $2.40 in Gynecology. It is evident, therefore, that the clinics seeing patients at a relatively low cost per visit are actually carrying the Medical Clinic, which sees patients at a relatively high cost. The flat rate for all patients is justified as an administrative policy on the same ground that the flat per diem rate is justified in fixing the charges for patients cared for in the wards or private rooms of hospitals, regardless of the cost of the individual services rendered.

DETERMINATION OF PATIENTS' ADMISSIBILITY

Some one will ask: "How do you determine the admissibility of an applicant for Pay Clinic Service?" "What economic conditions of the individual or his family render him eligible for Pay Clinic treatment?" This must be determined by consideration of several factors. The applicant is interviewed by an admitting officer, whose background of training is such as to enable her to visualize the home environment and to secure from him a correct statement of his occupational and financial condition. She must be familiar, for example, with the prevailing wage scale in the various industries, the present industrial situation as to local strikes, or the seasonal character of the particular trade. She must be able to see the relation between the patient's present disability and the probable length and cost of treatment, and to weigh these probabilities against his savings and income to determine how much surplus there will be to pay for medical treatment after reasonable cost of living for himself and his family has been deducted. If the patient is admitted, she must also have sufficient knowledge of anatomy and physiology in its relation to medical practice to enable her to assign him to the appropriate clinic.

The Pay Clinic has two limits of exclusion—the one for the patient whose income is above, and the other for the patient whose income is below the amount established as within the range of reasonable eligibility to utilize this service. Patients falling within the former group are advised to seek treatment at the office of a private practitioner; those in the latter group are advised to go to a free or to a part-pay clinic, or

more often are transferred to the Dispensary's morning clinic service.

No sharply defined line is drawn, but in general a single person without dependents, earning $35 a week regularly, would not be regarded eligible to Pay Clinic service at the Boston Dispensary, whereas a married person with several dependents might be admitted, although he were earning somewhat over this amount. Analysis of 221 consecutive records during the fall of 1927 showed 37 unemployed or working irregularly or on part time. Of the remaining 184, who were employed, representing 84.6% of the number studied, six were earning under $10 a week; 64, between $10 and $20 per week; 79, between $21 and $30 a week; 21, between $31 and $35, and the remaining 14, over $35 a week. The average weekly wage was $29.41.

Now, $30.00 a week, or $1500 a year, is not a large amount on which to provide food, lodging, clothing, and sundry essentials for one's self and family. It is difficult to see how families obliged to live on this income can possibly meet, without serious deprivation in other ways, the cost, at private rates of $3 to $5 a visit, of severe, unexpected and long drawn-out illness; yet this income is well above the average for a very high percentage of the wage earning community. In fact, a study of data in the Department of Labor and Industries indicates that 76% of all the wage earners in the various industrial groups in Massachusetts received an average wage of $1325 a year during the first two months of 1930.

With the cost of medical service at the present level, it is fairly evident that a large element of the wage earning population cannot afford to employ physicians at private office rates. This is not to be construed as a criticism of, or reflection on, the medical profession; nor do I wish to infer that the practice of medicine, as now conducted by doctors in private offices, is at too high a profit to the individual; or that doctors themselves do not wish to remedy the situation. Nevertheless, until some other method is devised whereby this element of the population can secure adequate medical treatment at prices which it can afford, Pay Clinics remain a social and an economic necessity.

VISITS ANALYZED BY DEPARTMENTS

Analysis of the 45,923 visits made last year, the largest in the history of the Dispensary's Pay Clinics, brings out the fact that only 4,675, or about 10%, of the visits were for general medical advice, the remaining 90% being for treatment in some one of the specialties. Over 89% of the latter were for specialties relating closely to treatment of gonorrhea and syphilis, with their complications. Analysis of the 4,675 visits made by patients in the General Medical Clinic shows that 671 were for general physical examination of patients under treatment in the specialty clinics to reveal the possibility of functional or organic disorders, the existence of which must be taken into account in the adequate treatment of patients in the specialized clinics. A very large majority of the remainder of this group came in the first instance because of difficult and obscure conditions, the proper treatment of which required rather more technical and more elaborate procedure, both for diagnosis and treatment, than is obtainable in the office of such general practitioners as were within the reach of the patients concerned.

ANALYSIS BY NUMBER OF INDIVIDUALS

The number of clinic visits is not so significant as the number of visits per patient. A patient might be able to pay the private office fee for one or two visits and yet be unable to pay for the large number of visits required over a long period of illness. Let us analyze these 45,923 visits made by patients last year from this point of view.

We find that the total number of individual patients treated last year was 5,136. Breaking this group into its component parts, we find that 1,224 different patients made the 4,675 visits recorded in the Medical Clinic, an average of 3.8 visits per patient. The 36,857 visits to the three clinics including, but not exclusively treating, venereal diseases, were made by 2,673 individuals, an average of 13.8 visits per patient. Without going into further analysis of the other clinics, the figures already given serve to illustrate the point.

NECESSITY FOR SOME FREE WORK

There are many who feel that it is important for an institution maintaining Pay Clinics to exclude all patients unable to pay fees representing the full average cost of the services rendered; that it is detrimental to the interests of such a clinic to do a certain amount of free or part-free work, for the reason that to the extent to which this is done, the patients are benefiting by a service the entire cost of which they do not pay, and are therefore recipients of private charity. This would be true if the fee schedule were too low to cover the cost of maintenance, with all patients paying the full rate. There would then be a part of the service not fully met by the fees of the patients unwilling to receive charity. But for the past nine years, a patient who has paid the scheduled fees has been paying not only the full average cost of his treatment, but a small increment in excess. This has tended to reduce, although not entirely to offset, the deficit due to remission of fees to other patients unable to pay the full rate. At the present time, therefore, no patient paying the scheduled fees need feel that he is accepting charity or losing his self-respect, provided he were rightly admitted in the first place.

As to those who cannot pay the full rate, and who ought theoretically to go to morning "charity clinics", there is a considerable group at the Boston Dispensary (as many as 125 in a

total attendance of 300 to 350 in a single evening) who cannot do so because they are employed during the day-time. Yet they do not earn enough to take care of family needs, with sufficient margin to meet the fees at pay clinic rates. Many such patients are receiving antiluetic treatment and represent definite public health problems; others present complicated general medical conditions which must be treated in evening clinics, if treated adequately at all. Until some of the other Boston hospitals establish evening free or part-pay clinics to take care of this rather large group of patients, the Boston Dispensary cannot fairly do otherwise than admit such patients to its evening pay clinics at reduced rates.

HEARING OF CHILDREN AND ITS RELATION TO SCHOOL WORK

The results of the studies made by the Public Health Service with special reference to the hearing of school children and its relation to their work in school have recently been announced.

In the whole group studied there appeared to be more normal or above normal hearing among the older children. It is impossible to say whether this is a real difference or whether the older children made better records because of a better understanding of the tests. Among the actually hard of hearing (loss of nine or more units) the older children were in the majority, and, in general, there was slightly more significant impairment of hearing among the boys of all ages than among the girls. In no group at any age, when both sexes were taken together, did the rate of children with significant hearing loss rise as high as 4 per cent., and the percentage of children with significant hearing loss was generally greater in the average-for-grade group, and in the group with the lowest intelligence quotient. In general, there was a higher proportion of left ears with good hearing than of right ears. This was true of the group as a whole and of each separate school group. With one exception (boys in the 12-13 year group) the superiority of the left ear was maintained at all ages. Likewise, the predominance of poor hearing in the right ear was general at all ages except 12-13. No explanation of this difference is offered, but the element of chance may have been a factor. Among the children doing the poorest school work in the youngest and oldest groups there was the largest amount of significant hearing loss. In the intermediate-age groups the findings were not clear cut. The percentage of children with a discharge from one or both ears varied inversely with the grade of hearing.—*United States Public Health Service.*

BIRTH RATES AND INFANT MORTALITY RATES: 1929

The Department of Commerce has prepared a table showing by states birth rates for 1929 and infant mortality rates from 1915 to 1929, inclusive. In 1929 the infant mortality rate (deaths of infants under one year of age per 1,000 live births) showed a marked decrease as compared with 1915. In fact the rate (68) was the second lowest since the establishment of the birth registration area in 1915. At that time this area was composed of 10 states and the District of Columbia and included 31.1 per cent. of the population of continental United States, while in 1929 there were 46 states and the District of Columbia in this area, and 94.7 per cent. of the total population of continental United States.

For the sixth consecutive year, Oregon leads the states with the lowest infant mortality rate (48). In 1929, 11 states had lower rates than at any time since their admission to the registration area. These were: Minnesota (51), Arkansas (58), New Jersey (60), Illinois (61), Massachusetts (62), Florida (65), Michigan (66), New Hampshire (68), Louisiana (74), Georgia (76), and South Carolina (91). Two states—Iowa, and Maryland—in 1928 attained their lowest rates which did not change in 1929.

Taking the rate for the registration area of continental United States as a basis, 24 states had lower rates in 1929 and 21 had higher rates, while New Hampshire's rate was identical. With the exceptions of Colorado, Maine, and Wyoming, the high infant mortality rates in these 21 states were due to the great infant mortality among the colored populations, especially in rural districts.

The birth rate for the year 1929 was 18.9, the lowest for any year since the establishment of the birth registration area. Oregon had the lowest rate (14.1) of any state in the registration area. Significant of "the declining birth rate" are the rates of 25 states which are lower than the rate for the birth registration area of continental United States. The highest birth rate, 26.9, is recorded for New Mexico, and Utah, 24.8, North Carolina, 24.7, Alabama, 24.0, West Virginia, 23.8, Mississippi, 22.9, South Carolina, 22.8, follow in the order named. It will be noted that, with two exceptions, the high rates in these states are undoubtedly due to the large percentage of colored population.

The rates for the New England States are as follows: Massachusetts 17.5, Maine 19.9, New Hampshire 17.6, Vermont 18.8, Connecticut 17.2, Rhode Island 18.0.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PATHOLOGICAL CHANGES OF THE ENDOMETRIUM*

BY JOHN F. GILE, M.D.†

DURING the past year we have had under our observation four cases of hydatidiform mole, which seems an unusual number. In looking through the hospital records of the last nineteen years, we have gone over 28,151 case histories and have found five other cases. Two of the four cases seen in the past year were outpatients, making the total number of clinical cases nine. During the same period of time there have been recorded in the hospital records 2,440 cases of pregnancy. Taking the total number of general hospital admissions, we find that hydatidiform mole occurs about once in 4,000 cases, or about once in 320 cases of pregnancy, using the figure 2,440. In looking for further data to go with this, Dr. Kingsford kindly allowed us to use the records of his laboratory, and we looked up the records of diagnoses of uterine curettings occurring during the last fifteen years. Here we have a total of 1,725 cases distributed as follows:

Curettements	1,725
Hydatid Mole	10
Hyperplastic Endometritis	433
Epithelioma	175
Chronic Cervicitis	228
Hypertrophy Endometrium	155
Placental Debris	135
Fibrosis Cervix	125
Adenocarcinoma	69
Adenoma	3
Interstitial Endometritis	52
Polypoid Endometritis	44
Retention Cystic Change	46
Uterine Polyp	60
Chronic Endometritis	36
Negative Endometrium	33
Cervical Polyp	30
Diffuse Endometritis	17
Blood Clot	16
Necrosis Endometrium	10
Ulceration Cervix	10
Fibrosis Endometrium	6
Granulation Tissue	6
Atrophy Endometrium	12
Hypertrophy Cervix	3
Hemorrhage Endometrium	3
Papilloma	2
Fibroma	2
T. B. Endometrium	2
Multilocular Cyst	1
Maceration Endometrium	1

Findley and Essen-Möller give the frequency as once in 3,000 normal pregnancies, Williamson once in 2,400 cases, and Williams states that it is even more frequent than this.

The disease occurs during the usual period of child bearing and is stated to be more common in multiparae. Our cases came in the following age groups:

15-24 years	3
25-34 years	2
35-44 years	2
45-54 years	2

Findley's table, which is the one commonly quoted, shows age incidence as follows:

Below 15 years	3
15-25 years	111
25-35 years	143
35-45 years	84
45-50 years	36
50-55 years	17

Figures gathered by Dorland and Kehner indicate the same age incidence as the above table.

We do not have a routine pathological examination of the placentas of normal deliveries, and hence have no record of the frequency of small moles occurring in full term placentas. This evidently takes place with some frequency. The pathological records probably do not give us a true picture of the relative frequency of this condition because the diagnosis can be made almost beyond question of doubt macroscopically by examination of the vesicles, and therefore they are not sent in for laboratory examination.

It will be noted of the curettements sent in for examination that about one in 150 show hydatidiform mole, or about one out of every fourteen which show placental tissues. It is also to be noted in this list that carcinoma of the cervix is about two and one-half times as frequent as adenocarcinoma of the uterus, which is a slightly higher proportion of adenocarcinoma than is given by most statistics. The large number of various types of disease of the endometrium which will clear up under conservative treatment is good evidence of the value of microscopic examination before a patient is subjected to radical operation. A great deal has been written and said on this subject in the past few years, but the sad fact remains that too many uteri are sent to the laboratory on the symptom of bleeding alone, and of which pathological examination shows a polypoid endometritis or some other benign condition which will clear up in a good percentage of cases by one to three curettements or by an application of radium. Two cases of tuberculosis of the endometrium are found in this list. This condition is almost always secondary to tuberculosis elsewhere in the body, and is usually secondary to tuberculosis of the tubes. It is said to occur in 53% of genital tuberculosis and is a descending infection in most cases.

As would be expected, chronic cervicitis and

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†Gile—Instructor, Dartmouth Medical School. For record and address of author see "This Week's Issue", page 947.

fibrosis of the cervix make up a large proportion of the number of cases, and doubtless many of these specimens came in as the result of repair work or where one was suspicious of the presence of carcinoma.

Further discussion of this list will be left to Dr. Kingsford, as I wish to give briefly the following histories and say something in regard to hydatidiform mole.

CASE 1 (Bowles) Woman age 41. Five children living and well, and she has had no miscarriages. For the last four and a half months she has had nearly constant flowing with palpitation and dyspnea and has been in bed part of the time because of the excessive flowing. For two months previous to this she had flowed every two weeks, which was not her normal. She had a mass reaching to the umbilicus which felt like a pregnant uterus. A curettement was done and a quantity of moles was obtained, varying from pin point in size to two inches in diameter. The masses of translucent vesicles were attached to one another by tiny pedicles, and each group attached to larger pedicles. She made an uneventful convalescence, and five weeks after operation appeared well and had not flowed.

CASE 2 (Bond) Woman, age 47, who had had two forceps deliveries, one and five years ago. Her last period was in February, 1929, and she was first seen October 9, 1929, with a uterus the size of a four to five months pregnancy, and no diagnosis was made. She flowed for ten days following the examination, and from the twentieth to the thirtieth of November she flowed, and on the latter date she passed a large clump of moles, which was sent in for examination. She was examined on January 14, 1930, having had a period of twenty-eight days after the passing of the mole and which seemed normal.

CASE 3 (34977) Woman, age 49. Six children living and well. She had a puerperal sepsis eighteen years ago. She had had irregular periods during the past year and skipped her January period, but flowed three days ago. She was admitted to the hospital on February 17 with a diagnosis of gall bladder disease. Typical history and shadows in the gall bladder region. Cholecystectomy was done. For two to three days following the operation she flowed. Sixteen days after operation she flowed and passed a quantity of moles. On the fifteenth of March he was curetted and much necrotic placenta with hyatid moles were obtained. Flowing ceased thereafter.

CASE 4 (10407) Woman, age 22. Had skipped three periods, when she flowed with the passage of a large mole. Period regular one month later, and periods have continued to be so one year later.

CASE 5 (24,887) Woman, age 25. Had one miscarriage at five months, four years ago, and has one child age two. The present illness dates back five months, when she skipped one period, then had what was apparently a normal one. One month later she started to flow and has continued since. One month ago she flowed hard for three days. She has had considerable pain in right side, which has been acute the last three days. She has marked tenderness and spasm in the right lower quadrant. Vaginal examination is reported unsatisfactory because of tenderness. Hot douches were ordered, and with the first she passed a large mass of moles. Because of pain abdominal section was done. The uterus was large and boggy, and the right ovary was cystic. A total hysterectomy was done. Pathological examination shows the remains of the mole, but no malignancy. She made an uneventful convalescence.

CASE 6 Woman, age 18. Negative history until present. She skipped a period six weeks ago. Two weeks ago she was seized with acute lower right abdominal pain with vomiting. Ten days ago she noticed a "bunch" in the lower part of the abdomen. She started flowing again four days ago. Physical examination negative except for a mass extending half way to the umbilicus and nearly across the abdomen, closely connected to the uterus. Four days after entrance to the hospital she started to flow profusely and a vaginal pack was inserted. On removal of this one-half hour later, a quart of hydatidiform moles was expelled. Curettement obtained half a cupful more. Recovery was uneventful. This patient was seen nine years later for other reasons and is entirely well.

CASE 7 (12600) Woman, age 28. Last period was four months before entrance. Complaining of nausea and gas distress. General physical examination negative. The abdomen shows a smooth rounded tumor rising to the level of the umbilicus. No fetal movements, parts, or heart sounds. Curettement was done with removal of a few hydatidiform moles and a dead fetus of about four months. She made an uneventful recovery.

CASE 8 (8343) Woman, age 22. Abortion at five months one year ago. She skipped a period nine weeks ago. One month ago flowed hard for six days. Abdomen has increased rapidly in size since this time, and abdomen now looks like a seven months' pregnancy. The mass is apparently part of the uterus. Curettement was done with the removal of moles. She ran some temperature following operation. Ten days after operation a tumor was felt in the right lower quadrant of the abdomen, not connected with the uterus. Whether this was a luetin cyst is impossible to say. Five days later this was said to have been smaller. Uneventful convalescence.

CASE 9 (8132) Woman, age 38. Three children living and well. For six weeks patient has been flowing constantly, varying from clotted dark blood to thin watery pink discharge. Two quarts of cysts were removed at curettement with moderate hemorrhage. Uneventful convalescence, and patient is well today.

The term hydatidiform given to this condition originated because of its close resemblance to echinococcus cyst. The etiology of the process is still a matter of discussion, some believing that it lies in changes in the ovum, and others incline toward the belief that it is due to changes in the endometrium, such as interference with the blood supply. The first theory is somewhat plausible, as when in twin pregnancy one fetus develops and is delivered normally, but rarely lives, whereas the other develops into a mole. This condition has been reported rarely. If the endometrium were at the bottom of the cause, it would hardly seem likely that this would take place.

Grossly the diagnosis is usually easy. The grape jelly-like appearance of the vesicles, varying greatly in size, and held together in bunches by friable bloody tissue is pathognomonic. In the uterus they are apparently attached at all points, or may be limited to one site, and the quantity obtained at operation is sometimes amazing. In certain cases the villi invade the uterine musculature and may actually penetrate the peritoneal covering. The vesicles in section

are seen to consist of a gelatinous semi-solid cell filled with a few drops of translucent fluid.

Microscopically there is seen the swollen villus, containing calcareous or hyaline areas and with almost always a marked proliferation of the layer of Langerhans' cells, as well as a marked budding of the syncytial layer.

Along with these changes there is frequently cystic change in one or both ovaries, stated by one writer to occur as frequently as 50%. In only one of our cases did we actually see this change, and that in one ovary only. It is also said that these cysts clear up after expulsion of the mole and that operative interference is not indicated. The causation of these cysts seems to be more hypothetical than the cause of moles.

As was said, the diagnosis after the passage of a mole is, of course, easy. The condition should be suspected in a uterus which is disproportionately large for the length of time that a patient should be pregnant. On account of the severity of the bleeding which takes place and the unlikelihood of a normal pregnancy being present, exploratory curettement will often reveal the diagnosis. The size of the uterus, however, is not always disproportionate to the possible month of pregnancy, as is well illustrated by our second case, who had had amenorrhea for eight months and yet had a uterus the size of a four and a half to five months pregnancy. Bleeding which may be more or less constant over a period of months as shown by another of our cases is an important point to be kept in mind in making the diagnosis. In other words, until a vesicle is found in the blood, an hydatid mole must be differentiated from fibroid or carcinoma of the uterus, placenta praevia, or, of course, a threatened abortion. Ordinarily sometime between the third and fifth month, abortion, at least partial, takes place.

The mortality for this disease as given by Schumann, Findley, Eden, Dorland, and Williams varies from 10-25%. In other words, it is rather high. Dorland's figures give the mortality as due to hemorrhage at the time of operation 3%, perforation of the uterus 2%, and infection 5%. The usual toxemias of pregnancy may occur, and the anemia in the long bleeding cases is sometimes a factor. In a certain number of cases the villi perforate the uterine musculature, and cause serious sequelae, or perforation occurs at the time of curettement.

The treatment of course is primarily to get rid of the mole, and more or less difference of opinion exists as to the best procedure. Our own opinion, based on this small series of nine cases with no immediate mortality, would be that thorough curettement and emptying of the uterus would suffice. On one case, as was said, we did a hysterectomy because of abdominal pain and tenderness and the presence of fever. Pathological examination in this case, however, seemed to show that curettement would have been sufficient. As was said above, curettement must be gentle, and the uterus should be dilated sufficiently to allow finger examination of the uterus. If, after a week, bleeding continues, further curetting should be done, and if more mole is found, it should be removed. Vaginal hysterotomy for better exploration of the cavity of the uterus is not a bad procedure. One man at least has advised abdominal hysterotomy for exploration purposes, but on the whole this is considered too radical by most surgeons. If uncontrollable bleeding takes place, the surgeon should be prepared to do a hysterectomy. If hysterectomy is not done, the patient should be kept under observation for some months and further bleeding should be an indication for microscopic examination because of the danger of the development of chorion-epithelioma. It is said that from 5-50% of hydatidiform moles are followed within five years by chorion-epithelioma. Figures also prove that the older the patient with hydatid mole, the more likely she is to develop a chorion-epithelioma. Williams and Marchand in 1895 wrote on this subject, and their observations seem to hold good today. We have had no cases clinically or are there any cases recorded in the figures taken from the laboratory reports. Chorion-epithelioma is a serious condition, the diagnosis is best made by pathological examination, and radical procedures are necessary if the disease is to be dealt with successfully. Metastases to various parts of the body are frequent. As our experience with this condition is nil, I will not go into it further, but mention it simply because of its being one of the serious complications following hydatidiform mole.

To summarize briefly, nine cases of hydatidiform mole have been reported and a list of 1,725 uterine curettements have been analyzed. The chief lesson learned in this examination is that if a pathological report is had on these cases, only the ones showing carcinoma, or adenocarcinoma, should have immediate radical treatment, and in the majority of cases today probably only the adenocarcinomas should have complete hysterectomy, as radium seems to offer the best hope in the epitheliomas. This leaves a large majority in which curettement or cervical repair work will give complete relief with safety. In making this statement, I realize that there are other conditions which may be present which will indicate the need of further work, but for the symptoms bleeding or discharge, which are the common ones in all of these diagnoses, fewer uteri will be removed if we know exactly with what we are dealing. In our experience, hydatidiform mole is one of these, and curettement should be the primary procedure.

The following treatises have been consulted in the preparation of this paper.

Gynecological and Obstetrical Monographs
Frank
Lynch
Gellhorn
Davis
Culbertson
Novak

Lewis' Practice of Surgery
Frank and Geist

Textbook of Obstetrics, Williams

Gynecology, Graves

Findley, P.: American Journal Obstetrics, N. Y., 1917, V. 75, Pp. 968-974.

Novak, E.: Hydatidiform Mole and Chorion-Epithelioma. Journal American Medical Association, 1922, V. 78, Pp. 1771-1779.

Discussion

Dr. H. N. Kingsford, Hanover: Taking up the discussion of this paper, and being limited to five minutes, I will confine myself to a discussion of some of the results of the microscopical examination of this series of 1,725 curettements. It is a rather interesting thing that in all this number of curettements we did not run across a single chorion-epithelioma, and there were some 200 curettements that showed placental debris in addition to those that showed the moles. Chorion-epitheliomas are not common in our section of the country.

Another thing that is interesting is that 16 out of this number were absolutely nothing but blood clots. I mention that because I am pretty sure that some of this material was sent in from the clots of blood that came away, and on the slip was marked "Curettements" when really they were nothing but the blood, and, of course, in those clots of blood there is liable to be nothing but blood and you do not really get at the bottom of the trouble. The curette should be used, because very seldom, unless there is some necrosis, will there be anything in the clot but blood.

In 33 out of this total number of cases we could not find anything but what I call a normal endometrium, yet these individuals presumably bled more profusely at menstruation or bled when they should not bleed, between periods. That is another good evidence of the point Dr. Gile brought up, that you should not consider in all cases that the individual has a malignant condition if they do bleed between periods. Of course, not all physicians have that idea but you would be surprised at the results you get from doctors in connection with the specimens that are sent in with positive clinical diagnosis of malignancy because the patient is bleeding between periods.

He mentioned two cases of tuberculosis of the endometrium, and the statistics show, as he brought out, that they are almost always connected with secondary tuberculosis of the tubes or elsewhere. One of these cases died three years after curettement, and we were able to get an autopsy. Of course, I was very much interested as it was a case I had followed up somewhat, but there was no tuberculosis anywhere else in the body that you could find. We had a complete autopsy and very carefully searched for tubercular lesions elsewhere. The tubes in that case were absolutely normal, and the tuberculosis of the endometrium was not cured by the curettement. We had another case that was very interesting, the like of which I never saw before. It was a case of endometritis, real inflammation of the endometrium, and there were hundreds of seat worms in the endometrium which actually caused that endometritis. I never saw a case like it before. I never heard of anything like it. They probably crawled into the vagina and then up into the uterus and produced inflammation of the endometrium.

Dr. George C. Wilkins, Manchester: I wish to concur with all that Dr. Gile has said about the advisability of curettage in patients who are bleeding. It is unfortunate at least for the patient, when that patient has been subjected to complete or sub-total hysterectomy, to find by pathological examination that nothing existed other than a polyp in the uterus or hyperplastic endometritis or some other pathology of the endometrium which caused bleeding between the periods. In my experience the majority of cases of bleeding are not malignant, and I think that every woman is entitled to a preliminary curettage if she is bleeding between her periods, or bleeding more at her periods than she should.

I do not believe that it is justifiable to remove a uterus simply because it is bleeding. Every woman who is bleeding between her periods is entitled first to an examination. If that bleeding is coming from the cervix, that is very evident, and that can be discovered by a speculum examination. If the bleeding comes from within the uterus and the uterus is not large and not a fibroid uterus, then curettage is indicated. The curettage will tell, after the pathological examination, what the trouble is.

In regard to the curettage I want to say this: That the curettage should be complete; it should be thorough. Every portion of the uterine cavity should be scraped very carefully. Every piece of material that is removed from the uterus should be caught on a sponge or in a basin, and then, to avoid the trouble to which Dr. Kingsford referred, all the material that has been curetted should be strained through pieces of gauze. Then it is very easy to pick out from the gauze the pieces of endometrium most suitable for examination and those should be sent to the pathologist.

The advantage of that has been shown recently in several cases that I have sent to Dr. Kingsford. I have had three cases in which examinations of all of the specimens from the endometrium removed showed both adenocarcinoma and squamous cell carcinoma. If only a portion of the endometrium had been sent, complete diagnosis would not have been made.

In another case which was suspicious to me I sent every specimen to him, and he reported back that out of six slides which he made four showed no malignancy and two showed malig-

nancy. This proves the necessity of careful and frequent curettage.

DR. GILE: I cannot add anything more, except to say that the report of the diagnostic curettage takes only two or three days, and even though a case is malignant that extra two or three days after the patient has carried the carcinoma for some time has no effect one way or the other on the outcome, and because it is well worth while in such a great majority of these cases to obviate hysterectomy I think two or three days' delay is desirable.

ARTERIOSCLEROSIS OF THE CORONARY ARTERIES, WITH REPORT OF AUTOPSIES*

BY OSMON H. HUBBARD, M.D.†

ARTERIOSCLEROSIS of the coronary arteries does not differ in its pathology from sclerosis of the vessels in other parts of the body. But in the heart we have a highly specialized organ, wonderfully adapted for the part it plays in the circulatory system, and so long as its nutrition is unimpaired and its tissues normal it withstands the innumerable strains to which it is subjected from youth to old age in a truly remarkable manner; but if its blood supply is interfered with through disease of its arteries, degenerative changes occur first in the heart itself, leading to more or less impairment of its ability to function properly, and later the effects of this impaired function are seen in the various other organs of the body.

Perhaps we can better appreciate the damage done to the heart from reports of autopsies that I have done upon a few cases dying from the results of coronary disease. The first I performed a few months ago for the Medical Referee of Cheshire County on the body of a man he had been called to view. The history of the case was, briefly, as follows:

On the previous evening this man, who lived alone, had a rather heated altercation with a neighbor. The next morning he did not appear at his work and on investigation he was found dead in bed. Some blood-tinged froth had exuded from his nose and mouth. There was an abrasion near the left temple and some bruises on one wrist. Other than these, there were no external marks. A hammer found under the cushion of a chair in his room led to a suspicion of foul play. The body was that of a well-developed man, 63 years of age. Examination of the head showed the bruise on the forehead to be only superficial. There was no fracture of the skull, no injury to the meninges or brain, or any hemorrhage. On opening the body, all abdominal organs were found normal with the exception of the kidneys which showed some evidence of chronic nephritis. The right lung was edematous, especially the lower lobes, and the bronchi were filled with blood-tinged frothy mucus. The left lung showed some edema, but not so much as the right. The aorta between the heart and arch showed several raised yellowish patches of atheroma, some containing calcareous matter; this was especially marked around the openings of the coronary arteries. The heart was somewhat enlarged, weighing 350 grams. The valves were all normal. What attracted special attention was the left coronary artery which could be felt as a hard cord, running down the ventricular groove from the base of the heart nearly to the apex, and when dissected out, retained its shape like a firm round rod, and felt as if filled with sand. When opened, it was found to contain a firm clot which extended from near the origin of the artery two-thirds of its length, and could be traced into the larger branches. The lining epithelium had disappeared over a considerable portion of the interior of the vessel and had been replaced by rough calcareous plates. The right artery, while it showed some thickening of its walls, did not show the extreme characteristic changes found in the left. Examination of the cerebral, temporal, and radial arteries showed no gross appearance of sclerosis.

I gave the cause of death as coronary thrombosis, due to arteriosclerosis of the left coronary artery.

That he lived for a few hours after the formation of the clot was indicated by the edema of the lungs.

Some of us older ones, at least, are apt to be a bit hazy on our anatomy. In the chart that was shown the two coronary arteries were described arising from the aorta immediately above its origin, passing forward to the ventricular grooves which they descend to the apex, giving off branches to supply the muscular walls of the auricles and ventricles. Although minute anastomosing channels exist between branches of the two coronary arteries, the amount of blood which can pass from one to the other is so scanty that these vessels must be regarded as end ones, as practically very little blood can ordinarily be carried directly from one into the territory supplied by the other, so occlusion, partial or entire, of either of the arteries will cause more or less serious disturbance of the circulation in the part which it supplies. Then a diagram of a normal artery was shown giving in detail the component parts of the vessel with the following description: The intima is lined with flat, very smooth epithelium which offers little resistance to the flow of blood over it. Beneath this is fibrous tissue and, in the larger vessels, a well marked band of yellow elastic tissue which, at each dilatation of the vessel following systole, is stretched and by its contraction during diastole causes an even propulsion of the blood onward. This coat is nourished directly from the blood stream flowing over it. The second coat, or media, is made up largely of unstriped muscle fibres arranged in a circular man-

*Read at the Annual Meeting of the New Hampshire Medical Society at Concord, May 13, 1930.

†Hubbard—Pathologist to Elliott Community Hospital, Keene, N. H., President, New Hampshire Medical Society. For record and address of author see "This Week's Issue", page 947.

ner, and is under control of nerve fibres from the sympathetic system. This coat regulates the size of the vessels and thus the amount of blood flowing through them. It is nourished mainly by blood brought to it through the vasa-vasorum but the inner third is nourished from the intima. The third and outer coat is made up of fibrous tissue with a few elastic fibres and serves to give strength to the vessel and bind it to the surrounding tissues.

Sketches from the microscopic sections of those vessels were shown.

The first was cut from the aorta, just above the heart. There was no gross evidence of disease at this point, but the microscope showed the very early beginnings of sclerotic change. The essential lesion is a thickening of the intima, due to proliferation of the fibrous tissue and the deposition of round and irregular-shaped cells among its strands. This inner coat, as just stated, obtains its nourishment from blood circulating through the vessel, but as it becomes more and more thickened by the increased number of these cells the deeper portions are farther and farther removed from their source of food, causing the changes we see in this next chart which is from a section through one of the more thickened portions, showing the wall of the vessel as a raised yellowish area readily mapped out by the naked eye. Here the deeper portions have been so far removed from their supply of nutriment that they have undergone degeneration of a fatty nature, while those farthest removed have become partially necrotic with the deposition of lime salts.

Another drawing from a section through the upper portion of the left coronary was shown with the following explanation: You can see the great thickening of the intima with calcareous deposits in the deeper portions and thinning of the muscular coat. Also note the greatly reduced lumen. The second drawing is from a section lower down the artery and shows still greater reduction of lumen. Here the epithelial lining of the vessel is destroyed and its place taken by calcareous plates.

Under normal conditions the coronary arteries are very dilatable and readily respond to the call of the heart for more blood under any extra exertion, but with sclerotic changes about their orifices rendering them rigid or partially blocked, mechanically retarding the flow of blood through them, and with the changes in the coats of the vessels themselves, not only is the heart unable to obtain more blood on extra exertion, but the amount may be so reduced as to interfere with the nutrition of the tissues under ordinary conditions.

As each cell requires a certain amount of nourishment and oxygen to carry on its vital functions, any lowering of this supply first has the effect of reducing its functional capacity and later, with a greater reduction, causing structural changes. Not only is the muscular portion affected but the nervous mechanism also suffers, causing fibrillation and heart block.

Changes in the heart muscle depend on certain conditions. If the reduction in its blood supply is gradual the circulation is given time to adjust itself through the capillary anastomosis between the two arteries. The effect may be slow and extend over a considerable period, but there will eventually be found evidence of degeneration in the muscle fibres which will manifest itself by a certain amount of weakness, especially on any extra exertion, but owing to the great amount of reserve strength in the heart there may be no very marked symptoms. According to Osler, advanced coronary disease may be present without much disturbance of the heart and a man may get on very well for a considerable time with only the main branch of the artery open. But as the disease progresses and the vessels become more rigid and occluded, the flow of blood through some of the smaller vessels may entirely cease, and as they are practically end vessels, the blood of the areas they supply is cut off, producing infarcts. These areas become anemic. The muscle fibres degenerate and undergo fibrous transformation. There may be several small areas scattered through the myocardium, or there may be a larger area, usually situated in the wall of the left ventricle near the apex, which becomes thinned and weakened. Owing to the pressure of the blood within the ventricle this area may become stretched, resulting in a cardiac aneurysm which may eventually break, or there may be direct rupture through the weakened tissue.

I have made autopsies on the bodies of two persons who had died from rupture of the heart, the result of advanced coronary disease.

The first was on the body of Mrs. R., a woman 75 years of age. The only history I could obtain, pointing to heart trouble, was that of some shortness of breath. She had been ill for a few days with indigestion and some pain in the epigastrium, but had not consulted a physician. Subsequent findings would lead one to suspect that her pain might have been of anginal nature. She was lying down when a neighbor called. They chatted for some time, when Mrs. R. suddenly sat up and asked for a glass of water which was standing on the table. She took one swallow and lay down, but immediately sat up again, said she felt faint, fell back and expired. On opening the thorax the pericardial sac was found full of clotted blood completely covering the heart. On removing this and examining the heart a rupture, 17 m.m. long, was found through the left ventricular wall near the apex. The muscle around the rupture was yellowish, with a mottled appearance, and very friable.

The second was on the body of an elderly woman who had been in poor health for some time. Her heart gradually failed over a period of several hours before death occurred.

Autopsy showed a pericardium filled with

blood. The heart had a thin, bulging area in the wall of the left ventricle. Through the tissue at this point was a small, narrow, slit-like opening allowing the blood to gradually leak through. Inside, and lining this thin area, was a firm clot. This case could be classed as a small aneurysm of the heart. In both these cases there was marked advanced disease of the coronary arteries.

With extreme narrowing and roughening of the coronary walls from calcareous deposits a thrombus may readily form, and if in the upper portion of the vessel, as in the first case reported, sudden shutting off of the blood supply from a large portion of the heart may cause death to be instantaneous, or occur within a few hours, according to the rapidity of formation.

In cases of sudden death, especially in medico-legal cases, thrombosis of the coronaries should be carefully looked for, as it is possible in some cases for these arteries to be markedly diseased with very little evidence of sclerosis elsewhere, as in our first case.

In the early stages of coronary disease these vessels fail to supply the extra amount of blood to the heart muscle, only when an increased amount is called for under special strain. Under ordinary conditions the amount is sufficient to maintain the nutrition of the organ and meet all usual demands, but with more and more reduction of the blood supply the muscle tissue feels the lack of sufficient nutrition and loses more and more its power to respond to the call for more blood. Careful examination of the heart may fail to detect any lesion; the rhythm may be regular; no murmurs heard and no perceptible enlargement found; but symptoms of circulatory failure may show themselves in almost every organ of the body.

The respiratory system is usually the first to suffer from this impaired blood supply, shown by shortness of breath with more or less distress on extra exertion which gradually grows more and more pronounced as time goes on, until at last it is present even when the patient is at rest, and may be so great that he is unable even to lie down.

Pain is another symptom of this deficient blood supply. It may be in the form of angina pectoris from a decrease to the heart itself or in the legs or arms when, during active exercise, they do not receive the necessary increase in blood supply the muscles demand under these conditions.

Edema of the dependent portions of the body, as the ankles and legs, when the patient is about, ascites and pleural effusion are direct results of the diminution of the force propelling the blood through the capillaries.. There may be giddiness and even loss of consciousness from defective blood supply to the brain, and arhythmia, fibrillation and heart-block from the same condition in the heart. Edema of the lungs is often present, especially of the lower lobes, when there is great weakness of the right ventricle; and enlargement of the liver is also a frequent symptom of failing heart, due to an accumulation of blood in that organ from insufficient power to maintain the capillary circulation. In fact, every tissue in the entire body suffers more or less from lessened blood supply due to gradual failure of its propelling force.

Many puzzling conditions with obscure and indefinite symptoms can, by careful analysis and persistent observation, eventually be traced to a diseased condition of the coronary vessels. My field is not that of clinical medicine so I shall have very little to say in regard to treatment, but since the structural changes cannot be remedied the principal care must be along the lines of saving a crippled organ from over-exertion. Each individual case must be carefully studied and the patient's daily life so regulated that all his vital forces are conserved to the greatest possible degree.

Drugs have a small place in the treatment of coronary disease, their share being mainly to relieve such symptoms as demand attention and to give the patient the maximum amount of comfort.

Discussion

Dr. W. F. Taylor, Keene: Arteriosclerosis is too broad, and is as yet, too complex a subject to treat in any one short paper. Evidently Dr. Hubbard has taken this view, inasmuch as he has limited his paper to the study of the coronary arteries. The fascination in discussing coronary disease rests in its many problems, which have yet to be answered.

Dr. Hubbard apparently stressed the fact that the two coronary arteries, which supply the blood to the heart muscle have very little anastomosing relation with one another, and hence may be looked upon as end arteries. The modern trend of experimentation, has shown, by new stains, etc., that there is at least more anastomosis than was formerly credited to them, and that there is even some anastomosis with the Thebesian vessels. In the event of either of the coronary arteries becoming occluded, providing the process has been slow and gradual, the Thebesian vessels can evidently take on a considerable part of the function of supplying nourishing blood to the heart muscle.

Osler says that the vessels of Thebesius, which open from the ventricles and auricles into a system of fine branches, and thus communicate with the cardiac capillaries and coronary veins, may be capable of feeding the myocardium sufficiently to keep it alive when the coronary arteries are occluded. Dr. Joseph T. Wearn, of Boston has shown by methods of dye staining that the Thebesian vessels can, in an emergency, supply blood to the heart muscle.

Dr. J. H. Clarke, Philadelphia, in a paper on "Studies of the Coronary Arteries," states that

many capillaries, not ordinarily in use, exist in the myocardium and become patent and useful in coronary thrombosis—if the onset is gradual.

Relation of Veins of Thebesius to Coronary Thrombosis.—Wearn states that if the closure of the coronary arteries is brought about very gradually, the Thebesian vessels can take up the function of these arteries and supply the heart muscle with blood. Most likely it is the sudden closure of the small terminal branch in coronary thrombosis that causes death, for, if the patients survive the first immediate attack, they will recover, very frequently, if placed at absolute rest in bed. This long rest probably enables the heart to recover. A similar rest is often advantageous in the treatment of angina pectoris. These long periods of rest enable the Thebesian vessels to take up more of the duties of the coronary arteries.

Clinically, we have support of this ability of the Thebesian vessels to carry on, by a group of cases that have been reported, with complete old occlusions of the coronary arteries.

This rather considerable capacity of the Thebesian vessels to carry on, has lately been brought home to me by the case of the father of a colleague, whose coronaries had evidently been occluded for years, and who still had sufficient blood supply to nourish the myocardium. This particular case, at autopsy, showed an undilated heart with a musculature capable of further years of function.

The problem of explaining sudden death in all coronary deaths is not an easy one. The cause of ruptured myocardium and hypertrophied and dilated ventricles are self-explanatory. But what causes death in those cases that show a relatively normal-sized heart with occlusion of the coronaries?

It is of interest to note that immediately previous to death in these cases, we have a symptom complex that is in many ways comparable to surgical shock, which we know at autopsy gives no constant satisfactory pathological picture as to the sudden cause of death.

As I said in the beginning the fascination in discussing coronary disease rests in its many problems which have yet to be answered.

Dr. Louis C. Ager, Waterloo: This whole matter brings up an interesting theory that was presented some time ago in regard to the actual circulation of the coronary arteries. About 100 years ago an anatomist of great repute stated that from his observation the circulation of the coronary arteries was toward the aorta. Of course, it was absurd on the face of it, and yet there have been recently a few studies made in relation to blood pressure in the coronary arteries in some of the lower animals which make it quite possible. I simply present it to you as something that we may have to take into consideration sooner or later. In other words, the teaching was that the heart muscle was actually nourished by the small vessels which were described by the last speaker directly from the ventricle, and that the coronary arteries carry away the impurities and also certain endocrine substances which have a special effect on the blood. So that just a little over 100 years ago, before we knew anything about endocrine substances, this physiologist stated there were certain substances secreted in the heart muscle which were different from any other secretion in the body and had a definite energizing effect upon certain organs.

Dr. G. E. Hoffses, Manchester: I was a little late in arriving and missed the early part of Dr. Hubbard's paper but I enjoyed it very much, especially the logical way in which it was presented. There are three or four facts which I think we should bear in mind and put special emphasis upon in regard to the coronary arteries. The first of these—this has already been touched upon perhaps somewhat by Dr. Hubbard—is that the coronary arteries may be sclerosed out of all proportion to the superficial arteries with which we come in contact, like the temporals and radials. We sometimes find perfectly soft radials and temporals, and yet we get anginal symptoms and all the indication of coronary disease, and if we are not watching out we find that those patients at 42 or 43 years of age are dropping off with a coronary attack unsuspected by us if we are not looking for it. We usually look for coronary hardening after 50, but more and more it is being borne in upon us that even at 40 many men who have perhaps had a number of attacks of inflammatory conditions, typhoid, rheumatic fever, or scarlet fever, have developed coronary disease at a younger age than we suspect.

Another factor we need to take in consideration is the fact that we may have very much sclerosis of the coronaries with very few symptoms if the anastomosis between the two arteries is very rich; and Grosse of New York has brought out the fact that there is, not in all cases but in the majority of cases, a very rich anastomosis between the right and left coronary arteries so that the blood flow can be carried very well if quite a large branch of one artery or the other is occluded; in fact, in quite a number of cases the whole left or right coronary branch has been found occluded, and yet that patient has been able to carry on a quite normal life of activity.

Another thing that we need to think of, I believe, is that we sometimes get a patient complaining of very slight substernal pain on exertion. We used to call it false angina or pseudo angina. We need to get rid of those terms. They simply lead us astray from the main problem. We have patients coming to us with very indefinite symptoms. They may have over-exerted themselves markedly and got a slight attack of substernal pain, and they may go along for months and not have it and then with over-

exertion get it again. These are danger signs. They mean that the coronaries are diseased, that their caliber is becoming smaller, and we need to limit these people's activities, to make them lead a more careful life, take more rest and take life more easily.

I am very interested in this subject of coronaries. It is becoming more important every day. It touches us in almost every case with which those of us who are engaged in heart work come in contact.

DR. JOHN C. HUCKINS, Plymouth: I want to speak upon just one particular symptom that Dr. Hubbard referred to in his paper and that was pain in the pit of the stomach. We not only find this in coronary disease but we also find it in myocarditis and in valvular heart disease. A physician with a patient complaining of pain in the stomach should ask as his first question, "Does this pain come on about two hours and a half after eating?"—having in mind a gastric or duodenal ulcer. But I learned from Dr. Frederick T. Lord of Boston, 15 years ago, in consultation upon a case, that one of the frequent symptoms of heart disease and coronary disease is complaint by the patient of pain in the pit of the stomach. That is my reason for bringing this to your attention. Do not always think you are dealing with a gastric or duodenal ulcer when people have a pain in the pit of the stomach.

DR. HUBBARD: I have not anything special to add to what I have already said. I was interested in what Dr. Ager had to say in regard to circulation in the arteries. I have seen something myself along that line and there is yet quite a field of investigation, as he says. I think there will probably be some new facts learned in regard to that in the near future.

MISCELLANY

REMOVAL

Dr. W. R. Schillhammer has moved from Groveton, N. H., to 112 Pearl street, Burlington, Vermont.

HILLSBOROUGH COUNTY MEDICAL SOCIETY

The following officers were elected at the 26th annual session of the above-named society held recently at the Nashua Country Club, Nashua, N. H.:

President: Dr. Howard E. Thompson of Nashua.
Vice-President: Dr. Clarence E. Dunbar.
Secretary-Treasurer: Dr. Deering G. Smith.
Delegates to the State Medical Society: Dr. D. W. Parker and Dr. D. G. Smith.

Addresses were given by Dr. Osmon H. Hubbard of Keene, N. H. and Dr. William P. Murphy of Boston. Dr. Murphy spoke on "Some Facts About Diet."

VERMONT STATE MEDICAL SOCIETY

117TH ANNUAL MEETING, BURLINGTON, OCTOBER, 1930

THE Thursday afternoon session of the Vermont State Medical Society was called to order at two o'clock, in Lecture Hall "A" of the Medical College Building, University of Vermont, by President George R. Anderson.

PRESIDENT ANDERSON: We are very fortunate in having with us the President of the American Medical Association, Dr. Malcolm L. Harris, who will now address us.

THE COUNTY MEDICAL SOCIETY*

BY MALCOLM L. HARRIS, M.D., CHICAGO†

I HAVE taken for my theme the simple word "Susceptibility"; by which is meant the state or quality of being susceptible to influences or the ability to receive or to be impressed by emotions or strong feelings. The human being displays to a remarkable degree the quality of susceptibility, and this quality has manifested itself from the dawn of civilization down to the present time. It may be found in people of every race and nation on the face of the earth and in those of every walk of life. In savage tribes we find that susceptibility is at the root of practically every custom. The simple mind of the savage was influenced by the leaders who were usually the chiefs of the tribes or what corresponds to the high priests and the dicta or acts of these by reason of mass suggestion gave rise to customs, which being constantly repeated became fixed and had the effect of present-day enacted laws. One may travel from the beautiful green hills of Vermont to the snow-capped coastal mountains of the west only to find that the people in all locations have alike the same quality of susceptibility. The reason for this is that all human beings from the lowest savage races to those of the highest type of civilization are endowed with the faculty of reacting to certain states or feelings called emotions.

I have been asked by your secretary to say something on the subject of the County Medical Society, but what has susceptibility to emotions to do with doctors and county medical societies? Are not doctors by reason of their almost constant association with pain and suffering of others supposed to have lost those finer sensibilities and therefore to be less susceptible to emotion? On the contrary the very nature of their calling has made them more susceptible to the influences of and to be strongly impressed by emotions. There is no doctor, be he ever so young or ever so old, who cannot be aroused into action by emotion. When we realize that emotion is the basis of civilization, that every great movement in the world that has come to fruition has had emotion as its motivating factor then may we hope to inspire the profession to action—action that will result in the building of a coöperative organization for the mutual benefit of all concerned.

There is scarcely a county, of which there are some 2800 or 3000 in the whole United States, that has not its county medical society. Some of these are dead, some exist in name or on paper only, others are struggling along with just enough breath to keep them alive, while still others are active, prosperous and progressive societies accomplishing a great good to their members and to the communities in which they thrive.

Not long ago there appeared in the *American Medical Association's Bulletin* a short article with the caption, "What's the Matter with the County Medical Society?" This little article brought forth immediate and numerous responses. Before coming to this meeting I carefully read over some fifty odd articles that were written in response to this little question in the *Bulletin*, some of which are very illuminating. Many of them were written by the secretaries of the societies. Some of them tried to explain why their societies seemed not to succeed while others related the wonderful things their societies are doing and the manner in which the interest of the members is kept up. Societies in distant and sparsely settled counties naturally had the greatest difficulty in holding their members together and keeping up their interest, while in large cities there seemed to be little difficulty in maintaining an active and progressive organization. I wish it were possible for every man here to read these articles as they present many ideas that make for the success of the county society. There is one point that is emphasized in practically all of these articles, a point that has long been known and one that has been repeated so often as to become a trite expression, and that is that the one man who is responsible for the success or failure of the society is the secretary.

*Address before the Vermont State Medical Society at its 117th Annual Meeting, at Burlington, October, 1930.

†Harris—Ex-President, American Medical Association. For record and address of author see "This Week's Issue", page 947.

He is the one who must inspire the members to action. He must be a man of unusual talents, a man of great resourcefulness, a student of human nature and a psychologist of no mean ability. He must be prepared to engage in an altruistic work in which he will meet with some disappointments but his optimism and a knowledge of the great good that he is doing to his fellows will cause him to rise above them. It is admitted that such an individual is not always easily found. He exists, however, in every community if sought for and properly approached. When such a man is found the greatest incentive that can come to him to cause him to undertake the work is the confidence, the approval, the mutual coöperation and the hearty support that must be given him by his colleagues. All personalities and petty jealousies must be buried, all fears that some one is going to gain benefits that are deprived the others, must be allayed. If the secretary is to be a man of superhuman qualities the members must show a spirit of forbearance and charity. The physician has led an individualistic life from time immemorial because his work in the care of his patients is and always must be largely individualistic, but if the great economic problems that confront the profession today are to be successfully met, individual effort must be merged into group action.

In attempting to put into operation any great movement the individual secretary can accomplish but little unless by his efforts he is able to create in the minds of his fellows a uniform emotion that will stimulate concerted action to the ends desired. The individual physician feels a sense of responsibility to himself but no one lives to himself alone. Man must live in community with man, and owing to the almost infinite variety of human needs and activities those having similar aims and purposes naturally become segregated into groups, each having mutual obligations and responsibilities. The medical group's obligations are of an imperative nature because the fulfillment of its aims is essential to human happiness. The medical profession has always been susceptible to all those influences which make for the happiness of the people but in order that these influences may be made operative it is necessary to bring into action the effect of mass suggestion. Emotion is the electric spark that sets free the potential energy created by mass suggestion but that the energy that is set free in a group of individuals shall result in solidarity of action it is necessary that an emotional culture shall develop a group conscience with a sense of constructive group responsibility. It is unnecessary to mention all the various things that a county medical secretary should do. One of the first duties of the secretary is to keep up the scientific interest of the members. How best to do this is one of the studies of the secretary. He must know the wants of the members. By frequent conferences with them he must learn their needs and desires and try to make the programs meet their wishes. It is not always well to have too much outside talent lest the members themselves lose initiative, and when outside talent is secured let the subject be one of interest to practitioners and see that it is presented in a practical manner. It frequently happens that an outside specialist who has been invited to read a paper presents the subject in such a technical manner as to rob it of all practical value to the listeners and not only lulls them to sleep for the time being but tends to destroy their interest in the meetings. Some time must be devoted to the discussion of economic problems that affect the profession of which there are many that readily crowd themselves to the fore. The social amenities must not be entirely neglected as they enable the members to become better acquainted, to know each other more intimately and help to promote a good fraternal feeling. Let the young man have an opportunity to talk at the meetings; he may not be so full of wisdom as the older practitioners but he has ambition and zeal and new thoughts and ideas often come from young brains, and young men are more easily susceptible to cultural influences.

These are but a few of the suggestions, all of which no doubt will readily come to the mind of the successful secretary who, recognizing the quality of susceptibility of the human mind to emotional culture, will be able by his tact, good judgment and devotion to the cause to build up and maintain a county medical society that will be a great honor to himself, a benefit to the profession, and a blessing to the people.

Discussion

President Anderson: Dr. Ricker will discuss this paper.

Dr. Ricker: Dr. Harris, I want to thank you most sincerely for this talk. And, gentlemen of the Society, the matter of the County Medical Society is of sufficient importance to warrant Dr. Harris coming here on a special trip from far away Chicago,—as great a man as the President of the American Medical Association, to get the subject before you. The Secretary's report has not been written for the sake of using up printer's ink, but was written to be read. This report does not contain anything but what I want read, and I am not going to repeat it here. For the most part the county secretaries have reported the activities of the year. Dr. Harris has emphasized the importance of the personality of the county secretary, and it cannot be said too strongly. I will say frankly to you that there are some mistakes in the selection of county medical society secretaries in the State of Vermont at the present time.

The activity of the county society is the activity of the State Society and of the A. M. A.

The county secretary, no matter how good a man, cannot do his best work without the stimulation and coöperation and aid and assistance of the members of the society. So, to those of you who are not county secretaries, I say, get behind your county secretary and let him know that you want meetings, and clambakes, and conferences, and that he is not the secretary of a dead organization, or a label set up in a row of cabbages out in the garden. Let him know that he is the executive officer of a live organization that desires action and looks to him simply to direct it. That alone will transform many of our existing county secretaries, who are now doing work of medium quality, into most excellent secretaries.

The other thing is the selection of a county secretary who has some of the qualities of susceptibility, and will be susceptible to such influences.

One definite suggestion I want to give you here is that at the earliest possible moment, certainly within three months of the time of your last meeting, which will date it about two years ago, in some cases, you have another one. Get behind your county secretary and tell him that you want one, and if he won't call it, then call it yourselves, and in the election of your officers do not simply take any man that will consent to take the job, but consider their selection seriously, and back them up and next year let us have every county report ready, the same as the best of the secretaries did this year.

MISCELLANY

REMOVAL

Dr. John D. Southworth is moving to new offices at 611-612 Service Building, Rutland, Vermont.

REPORT OF ANNUAL MEETING OF WINDSOR COUNTY MEDICAL SOCIETY

The Annual meeting of the Windsor County Medical Society was held at the Hourglass Country Club at Windsor, September 16, 1930. Luncheon was served to the members and guests at 12:40 P. M., after which a business meeting was held.

Officers for the ensuing year:

President—Dr. A. L. Patch.

Vice President—Dr. A. C. Walker.

Secretary-Treasurer—Dr. A. B. Woodman.

Delegate one year—Dr. C. P. Munsell.

Delegate two years—Dr. A. M. Cram.

Alternate—Dr. S. L. Garipay

Censors—Drs. H. C. Jackson and A. C. Eastman.

Res. Com.—Drs. B. A. Chapman and A. B. Woodman.

Two members have been lost during the past year and three added.

It was voted by the Society to hold the next annual meeting during the second week in May.

Following the business meeting, Dr. D. A. Anderson of the Hitchcock Clinic of Hanover, N. H., addressed the members on the subject of "Hypertension."

Dr. L. K. Sycamore, also of the Hitchcock Clinic, took as his subject "X-ray Therapy."

A. Bloodman, *Secretary.*

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 16451

DYSMENORRHEA AND JAUNDICE

MEDICAL DEPARTMENT

An American woman of fifty, divorced and working as a clerk, entered February 5 complaining of dysmenorrhea of a month's and jaundice of five days' duration.

In June, eight months before admission, she had with some, but not all meals, attacks of severe epigastric discomfort relieved by vomiting. X-ray examination at a well known hospital showed "an inflamed gall bladder". For the next five weeks she had periods of pain and vomiting about once a week, each attack milder than the last. The pain was usually in the epigastrium or the right upper quadrant radiating through to the back, and usually followed the noon meal and lasted half to three-quarters of an hour. From that time she was comparatively free from attacks until a month before admission. Then she began to have severe pain like that of childbirth accompanying menstruation and lasting with it for eight days. The flow was very slight for the first three days but profuse during the last four days. For nine years her periods had been irregular, coming at intervals of one to three months, but had never before been painful. Upon admission she was having profuse flow with severe pain in her back. For two weeks her skin had itched and for five days had been jaundiced. She weighed 170 pounds the June before admission. She had lost 26 pounds since that time.

Her father and mother both died of heart trouble. One sister died at eighteen of tuberculosis.

The patient had been divorced for thirteen years. She had one child living and well. She had had three miscarriages.

She had the minor diseases of childhood, including scarlatina. Twelve years before admission she had an appendectomy.

Clinical examination showed a well nourished woman showing evidence of some loss of weight. The skin and sclerae were deeply jaundiced. The heart and lungs were normal. The blood pressure was 110/90. There was very slight tenderness in the epigastrium and tenderness in both lower quadrants. A mass was felt in the umbilical region, possibly kidney. Rectal and pelvic examinations, pupils and reflexes normal.

Before operation the amount of urine was not recorded. A catheter specimen of urine February 6 showed specific gravity 1.028, a slight trace of albumin, Benedict's test green, much bile. Another specimen showed sugar, a very slight trace of albumin, much bile, specific gravity 1.024. The blood was recorded before operation.

X-ray examination showed no visible stones in either the gall bladder or the urinary tract. There were slight proliferative changes about the margins of the lumbar vertebrae.

The temperature was slightly elevated for five days after operation, 99.5° to 100.5°. Otherwise the chart was not remarkable.

Operation was done February 7.

From this point the medical consultant summarizes the case as follows:

"Jaundice increased practically from this time on, although there were a few days in which she was apparently getting better. After about three weeks of jaundice I saw her. At this time she showed soft pitting edema of the ankles, a palpable tender liver and deep jaundice, with 25 milligrams of bilirubin in the blood. . . . She was put on a high carbohydrate diet with large amounts of calcium. A few days later she developed definite ascites and became a little drowsy. The jaundice did not decrease. Slight itching commenced. She gradually became worse. During all this period her urine was loaded with bile and the stools were clay colored but did contain some bile.

"March 14 she had a duodenal drainage which showed fairly free fluid bile. . . . A belly tap showed typical low specific gravity fluid (1.004). . . . From April 5 she went downhill rapidly. The abdomen was so distended that one could not be sure of the liver edge. The edema and ascites increased. During the last three days she had a distinctly uriniferous breath. The non-protein nitrogen at that time showed 50 milligrams per 100 cubic centimeters, and it was probably higher on the day of death. The day before death she complained of a very peculiar generalized pain over the abdomen which I do not understand and the cause of which was not brought out at autopsy. She died quietly in coma on April 10."

CLINICAL DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

Of course dysmenorrhea is not likely to have anything to do with the cause of death. The jaundice is the thing we naturally fix our eyes on at first.

We do not know whether she was exposed to tuberculosis, so we do not know whether to take that as a factor of importance.

I venture to say no one on reading this history could make even an intelligent guess as to

what we are going to find. The symptoms do not connect themselves into any whole that I can think of. The uterine symptoms, pain and flowing cannot easily be connected with the jaundice. Jaundice may be connected with the early attacks of pain. The later part of the history does not fit in with the earlier part.

NOTES ON THE PHYSICAL EXAMINATION

"A mass in the umbilical region, possibly kidney." That is said in a jaunty, offhand manner. It seems to me peculiar that if they found a thing like the kidney down there so far from home they did not say more about it, did not say why they thought it was kidney, how movable it was, what its shape was.

DIFFERENTIAL DIAGNOSIS

We come to operation. I must say I should hate to be the surgeon without knowing more about it than you and I know. I do not believe we have all the facts that he had. I cannot well imagine a surgeon's going ahead with no more than that. I suppose it was an exploratory operation on the gall bladder. Certainly with a negative pelvic examination there was no reason to go there. I imagine he would go in in the midline so as to be able to feel to the right and left, thinking he might find cancer of the pancreas, cancer of the gall bladder or possibly gall stones. That of course we are going to see. With deep jaundice exploratory operations are not undertaken without extra good reason. To operate when the patient has been in the hospital only two days, it seems to me they must have had more evidence than you and I have. I suppose the preoperative diagnosis was one of those just given, some one of the causes of jaundice.

PREOPERATIVE DIAGNOSES

Chronic cholelithiasis.
Recurrent cholecystitis and stone in the common duct.

OPERATION

The gall bladder was found to be contracted on a large number of stones. The common duct was somewhat dilated. The pancreas was normal. No stones were felt in the deeper ducts. The stomach, duodenum and remainder of the abdomen were negative. The gall bladder was removed from below upward. The common duct had been pulled up into a V shape by contraction of the gall bladder. There was a large stone in its lower end which may have been compressing it. The gall bladder was removed. Troublesome hemorrhage from the liver bed was finally controlled by suture of the omentum to it. The common duct was opened. No stones were felt or washed out.

PATHOLOGIC REPORT

Acute and chronic cholecystitis.
Cholelithiasis.

FURTHER DISCUSSION

The normal bilirubin in the blood is from zero to 0.5 milligram per 100 cubic centimeters.

Edema of the ankles, ascites, drowsiness, tender liver cannot be accounted for by gall stones. Sepsis caused by gall stones might account for some of them, but not all. If we could find some complication of gall stones, some result of gall stones as the cause of the later symptoms it would simplify the case. The only complication I can think of as the cause of any of the symptoms would be sepsis running up from the common duct into the liver with pylephlebitis. That would cause jaundice and ascites, but it would not account for the edema of the ankles. We see here however nothing about chills and fever. Fever and chills would direct us to sepsis as the cause of the other symptoms. In their absence it would be very hard to blame us for missing sepsis.

Acute yellow atrophy is the natural thing to think of next. The difficulty is that so far as I know that disease has no relation to gall stones, and one does not like to make two separate diagnoses in a case of this sort. Acute yellow atrophy would account for drowsiness and ascites. It is not necessary to demonstrate liver atrophy by percussion. Often one cannot.

Could she have had ordinary cirrhosis of the liver? They had a good chance to feel it when the abdomen was open. Apparently nothing of the kind was seen or felt. I should think that was improbable.

Could she have had a malignant disease quite separate from the gall stones and not felt at operation? That might account for all the facts so far as I know here. The strange thing would be the shortness of duration and lack of anything like it felt at operation. People usually live longer with abdominal malignant disease, and with the abdomen opened and easy opportunity for exploration they did not feel it.

Sepsis, pylephlebitis, acute yellow atrophy or malignant disease,—cirrhosis does not seem probable enough to be much considered. The point against sepsis so far as I know is the absence of fever and chills. This is the type of sepsis that gives us very striking manifestations. There are types of sepsis—urinary sepsis—that give very little in the way of constitutional symptoms. But sepsis of the biliary tract is very likely to give chills and fever.

On the whole, acute yellow atrophy seems to have fewer positive objections than any of the others. That seems to leave the gall stone part of the history hanging, with no connection with what killed her.

Could she have had general peritonitis from

operation, and have died of that? That would account for the fluid in the abdomen, the fluid of peritonitis namely. That would not account for the jaundice; and it would be very strange if nothing were said about the local symptoms of peritonitis, such as tenderness and spasm. I should say no, it is not at all like peritonitis.

Could she have hemoperitoneum? In this type of disease, bleeding is apt to occur at any point in the body. That would probably have caused rapid pulse, faintness, air hunger. I do not believe she died of hemoperitoneum.

I am going over all the causes for fluid in the abdomen, which she apparently had. I do not feel satisfied with any diagnosis we have made. I cannot make any diagnosis better than acute yellow atrophy.

A STUDENT: You do not think this menstrual history has any significance?

DR. CABOT: Not with a negative pelvic examination.

A STUDENT: What is the possibility of adhesions after operation?

DR. CABOT: It does not seem to me they would form so quickly. That would mean that the adhesions, if they existed, were there before the operation. At operation they found gall stones but no adhesions. One would not expect this picture from operative adhesions.

A STUDENT: Perhaps the surgeon left the common duct closed.

DR. CABOT: He thought it was closed by reason of stone and took out the stone. I should not think he left it closed. I do not believe the adhesions diagnosis. That would not easily account for her death or her ascites.

A STUDENT: Occasionally when the common bile duct is opened cannot a cicatrix form so as to produce back pressure, jaundice and stricture and gradual breaking down?

DR. CABOT: But in this case the patient became immediately worse, more deeply jaundiced at once.

A STUDENT: What is the average duration of a case of acute yellow atrophy?

DR. CABOT: We are using the word more loosely. We used to say days or weeks. We have now come to recognize subacute cases that last a month or two and chronic cases that last several months. Acute yellow atrophy is a poor term. Toxic hepatitis, acute, subacute, or chronic, that is what I am speaking of. Certainly this case is within the limits of what one often sees in acute forms of that disease.

A STUDENT: Could she have had an ovarian tumor which could be hooked up with the menstrual history?

DR. CABOT: A small ovarian tumor might easily escape the examining hand. But it would not kill her.

A STUDENT: Would secondary metastasis from some other tumor kill as quickly as that?

DR. CABOT: I think that is perfectly possible, metastasis blocking the bile ducts, but so far I see no indication of it.

A STUDENT: What do you think that abdominal mass was?

DR. CABOT: I should have returned to that. Apparently at operation they did not find anything corresponding to that so-called "kidney". If they did not find it with the abdomen opened I do not see how we can say much with the abdomen closed. We have to say it was not there at all. I think that is what the surgeon said when he closed the abdomen.

A STUDENT: Is it possible to exclude the diagnosis of carcinoma of the head of the pancreas, not knowing the facts of the operation?

DR. CABOT: No, but I suppose the head of the pancreas should be accessible in an operation of this sort. The possibility of that diagnosis ought not to be present after an operation giving possibility of access; before operation it could not be excluded.

A STUDENT: In acute yellow atrophy does the liver grow smaller all the time in the late stages? Here the liver was felt three weeks after operation, giving the idea that it was large.

DR. CABOT: That was some time before death. We must say it got smaller after that. I told you I was not very well satisfied with my diagnosis. I shall be delighted if someone will make another diagnosis.

A STUDENT: Were the proliferative changes about the margins of the vertebrae just arthritis?

DR. CABOT: I do not think it is of any importance in the case. I think a great many people have such changes at this age. I cannot imagine its having anything to do with the cause of death.

A STUDENT: Could the case have been carcinoma of the bile ducts?

DR. CABOT: That is perfectly possible, only we should have to throw a good deal of asparagus at the surgeon. He was dealing with the bile ducts just as you are holding a pencil.

A STUDENT: How about carcinoma of the ampulla of Vater?

DR. CABOT: It was said that the duodenum was normal.

A STUDENT: Is primary liver cancer rare?

DR. CABOT: Not too rare to be considered. I do not know how it can be excluded. But why it should not have been felt in any way at operation I do not know. That is the chief thing against it. It might have been deep enough to be inaccessible.

A STUDENT: Would operation exclude infectious cirrhosis?

DR. CABOT: No, I do not know that it could. I spoke of infection, hepatitis from sepsis starting with gall stones. I was thinking of an infectious process in the liver. That seems to me the most natural one to think of. There certainly could not be any cirrhosis causing con-

siderable distortion in the lobules of the liver without their feeling it.

A STUDENT: Don't gall stones usually show by x-ray?

DR. CABOT: There are a good many cases where they do not show. I think it is rather good luck when they do.

A STUDENT: Would you consider non-obstructive jaundice, so-called?

DR. CABOT: If they have been fair in saying nothing about leukocytosis or chills we can exclude it.

CLINICAL DIAGNOSES

Hepatic insufficiency.
Subacute yellow atrophy?
Stone in the common duct?

DR. RICHARD C. CABOT'S DIAGNOSIS

Acute yellow atrophy.

ANATOMIC DIAGNOSES

Acute yellow atrophy.
Operation: cholecystectomy.
Acute pancreatitis.
Pulmonary atelectasis.
Ascites.
Icterus.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: This case showed acute yellow atrophy the duration of which I do not really know. At the time of operation we found a liver weighing between 700 and 800 grams. That is very small, possibly half the normal size. There was a considerable amount of fibrosis in it. There were still a large number of areas in which necrotic liver cells persisted, also the usual islands of regeneration. I am inclined to think she had acute yellow atrophy from the beginning, which perhaps caused the onset of her symptoms. In that case by way of explaining the relatively fresh areas of necrosis we found at autopsy we must assume that the disease occurred in two or more periods, one at the onset and the other just after operation, when she began to take a sudden turn for the worse. I am quite sure she had it a month before death, because at that time she had ascites which nothing else was found to account for in any way.

There was absolutely nothing else of any significance in the autopsy findings. She had ascites to explain the swollen abdomen, which is not at all uncommon in acute yellow atrophy. She had collapse of the lower lobes, which is also common when the abdomen is distended with fluid. The fact that she had been bedridden for a considerable period is alone a predisposing factor. The kidneys and heart were perfectly normal. I do not quite know what the uriniferous breath was. She may have had sweetish breath. That is quite characteristic, and possibly they mistook that for the breath one gets in chronic nephritis.

DR. CABOT: What about this mass they felt?

DR. MALLORY: Nothing at all was found.

Microscopically there was slight interstitial pancreatitis scattered between the acini. It did not seem to be enough to be considered of any great importance in the case. The pancreas was not grossly enlarged.

DR. CABOT: Is there any connection between gall stones and acute yellow atrophy?

DR. MALLORY: I do not know of any. That is an unusual combination.

DR. CABOT: Looking back from a therapeutic point of view, we cannot say anything in particular could have been done except to refrain from operation, which undoubtedly made her life a little more painful. But at the time it seemed to have been justified when they found all those stones.

I think that point about the mass around the navel is one to bear in mind as the sort of thing one finds in many of these cases. We have to take such facts as can be put together and interpreted. We always have to throw out some data. Presumably there is some explanation, but I do not know it. This was more gross and obvious than usual. But almost invariably there is something even after autopsy that cannot be explained.

A STUDENT: Was there any explanation of the uterine bleeding found at autopsy?

DR. MALLORY: The uterus was negative except for a slight cervical laceration which I am sure was of no significance.

DR. CABOT: If you watch these cases through a year you will find that it is not the exception but the rule that there will be one or more things for which we cannot find the cause.

A STUDENT: What was the cause of the acute yellow atrophy?

DR. CABOT: Usually we do not know. Outside of those cases due to chloroform or 606 or to any of the other known causes, which form the minority of cases, we have to say we do not know.

CASE 16452

ABDOMINAL CRAMPS AND EDEMA WITH LOSS OF WEIGHT

MEDICAL AND SURGICAL DEPARTMENTS

PRESENTATION OF CASE

DR. JOHN P. MONKS*: A forty-nine year old French Canadian box maker entered July 26 complaining of abdominal cramps and swollen abdomen of three weeks' duration.

The family history is essentially negative. His wife and three children are living and well. Two children died in infancy.

He had had mumps in childhood. The glands

*Senior interne on the West Medical service.

in his neck had been swollen since that time. Twenty-two years ago he had gonorrhea which apparently cleared up without complications. Fifteen years ago he had a left inguinal hernia repaired at this hospital. Thirteen years ago he had traumatic amputation of his right thumb. About two years before admission he had two penile sores. His blood was "bad" at that time. During the next year and a half he estimated that he had been given seventy-five intravenous and twenty-five intramuscular treatments by his own physician and at the Boston Dispensary and this hospital. One year ago he was seen in the Outpatient Department here. At this time there were definite mucous patches in his mouth. Dark field examination of these lesions was positive for spirocheta pallida. Hinton and Wassermann tests were repeatedly negative. Three or four months ago at the Boston Dispensary sugar was found in his urine. He was put on a diet and daily hypodermic injections which were possibly insulin were given by his own doctor for two weeks. It is not known whether he had been on any diet since that time. He had had symptoms of diabetes before that time, none since.

Three weeks ago he noticed edema of the abdomen and complained of generalized abdominal cramps after ingestion of food or liquid. These symptoms steadily progressed until the present. Since their onset he had been constipated and had had at times gray stools and "red" urine, as he described it. Two weeks ago he had occasional epistaxis. One week ago jaundice of the skin and sclerae were noticed. These symptoms remained about the same until admission, not progressing like the edema of the abdomen. There was no vomiting, no sharp abdominal pain, hematemesis, bloody or tarry stools. One year ago he weighed 204 pounds when he came into the hospital; 179 pounds after abdominal paracentesis was performed. He had had no noticeable dyspnea, cough or palpitation. He rarely took alcohol.

Physical examination showed a moderately jaundiced man presenting sluggishly reacting pupils. Both nares were somewhat obstructed. There was a walnut sized nodule at the angle of each jaw and another smaller gland in the right axilla. The abdomen was distended, with shifting dullness and fluid wave in the flanks. Some tenderness was elicited over a left hernial scar. The liver was felt two fingerbreadths below the costal margin. Just lateral to the nipple line was an irregularity which was thought to be a distended gall bladder. There was old scarring around the anal sphincter. The right thumb was missing. Bilateral Babinski and Gordon were found. A slightly tender and large epididymis was present.

The urine showed a slight trace to the slightest possible trace of albumin, no sugar, plenty of bile, many granular and cellular casts with rare red cells, and a specific gravity of 1.026 to 1.016. As the blood sugar was 73 milligrams and no sugar was found in individual urine specimens, we felt that diabetes was completely ruled out. Blood Hinton negative. Non-protein nitrogen 23 milligrams. Icterie index 30 to 50. Van den Bergh biphasic reaction 15.75 to 11.63 milligrams. Renal function impossible to read because of discoloration. Bleeding time three and a half minutes. Clotting time four minutes. A lumbar puncture was done: normal cell count, colloidal gold 4333322111, total protein 28, Wassermann negative, other findings entirely negative. Abdominal paracentesis was done with a yield of four and a half liters of slightly yellow clear fluid, specific gravity 1.004, cells 70, 6 per cent polynuclears, 64 per cent lymphocytes, 30 per cent mononuclears. Wassermann on abdominal fluid negative.

Plain gall bladder films were negative. Gastro-intestinal examination showed some delay to the passage of barium in the duodenum not characteristic of ulcer but suggesting external adhesions or external pressure.

Practically the only treatment was a high carbohydrate, low fat diet. From the fact that the patient seemed to be getting no better and the fact that the jaundice and edema were increasing we believed that the diagnosis of cirrhosis might possibly not be correct. The possibility of malignancy arose. The Surgical Service was asked to see him and advised exploratory operation, which was done. At operation a small contracted brown and green liver with nodes in it characteristic of cirrhosis was found. There also was a dilated gall bladder, no cause for which could be assigned. The common duct and the pancreas were normal. There were no stones in the gall bladder. A gall bladder tap was done and some thin light brownish fluid was withdrawn. The abdominal wound was closed with a drain inserted. The operation was done on August 13. On August 14 the patient suddenly went into collapse and died too quickly for intravenous medication to be given.

DR. GEORGE W. HOLMES: I do not believe these films will add anything. That is an apparently negative x-ray examination.

DR. WILLIAM M. SHEDDEN: I have two comments to make and one question to ask. The first comment is that the gall bladder was apparently distended without any evident reason for it, for there was no obstruction to the cystic or the common duct found at operation or autopsy. The second comment is that I think there is no question but that he should not have had ether. I think we increased the risk of operation by using ether. I think we should have used spinal anesthesia. My question is: how much can we tell by liver function tests as to what the liver will do later in resisting toxic or other stresses?

CLINICAL DIAGNOSIS

Cirrhosis of the liver.

ANATOMIC DIAGNOSES

Toxic cirrhosis of the liver.
Icterus.
Cholecystostomy.
Aberrant pancreas.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: This was a case of toxic cirrhosis. The liver did not at first hand seem atrophic, weighing 1600 grams, well within normal limits as usually given. On the other hand the man at some period must have been extremely large, because his heart weighed 400 grams, his kidneys 550, his spleen 400, and all the other internal organs were very much above normal size. A liver in proportion would have weighed at least 2500 grams rather than the normal 1800 grams of the average man. This liver, then, is distinctly atrophic. It was rather coarsely nodular, the normal lobular markings entirely obliterated. There was well marked bile stasis. There was nothing to suggest an alcoholic origin, so that hemosiderosis is ruled out. It is not the type of deeply scarred liver that we see in syphilis. By exclusion and also by its general character it fits into the toxic type. Whether or not it bears any relation to his syphilitic treatment I do not know. I have seen cases which seemed directly attributable to arsphenamin. I do not see any way of separating those sharply from the others.

DR. BETH VINCENT: Did the patient die of so-called cholemia?

DR. MALLORY: I should think so. How long did he live after the operation?

DR. SHEDDEN: Thirty-six hours. The house officer who saw him said he seemed in fair shape and then went rapidly to pieces.

DR. MONKS: The note says that at nine p. m. he suddenly went into collapse, his abdomen was found soft, and he was pulseless at that time. He died at 12:57 a. m.

DR. MALLORY: In a few of these cases—I remember two—following an exploratory operation there has been fresh acute necrosis found in the liver at autopsy.

DR. VINCENT: Was necrosis present in this case?

DR. MALLORY: At least it is not evident.

DR. VINCENT: Do you think the liver was functioning very inefficiently before operation?

DR. MALLORY: It certainly was causing obstruction.

DR. CHESTER M. JONES: Plenty of these cases of cirrhosis have only ascites until something else hits them; then they go very rapidly.

DR. SHEDDEN: How much can you predict from a liver function test as to what the liver is going to do?

DR. JONES: It depends upon whether the patient is jaundiced. If the patient is not jaundiced but there is retention of 50 or 60 per cent, one would rather expect a bad convalescence at the very best. I should say he was a very poor operative risk.

DR. MALLORY: It would be interesting and important if we could find some way of predicting beforehand the likelihood of sudden cholemic death following a relatively simple exploratory operation.

DR. VINCENT: I recall the case of one patient who was very much jaundiced. The differential diagnosis was between cirrhosis and obstructive jaundice from stones or cancer. We did not suspect that he had such a very marked cirrhosis, and I think that in that case also we gave ether. Within a very short time after operation he died a typical cholemic death. At autopsy there was evidence of a seriously involved liver and signs of a very recent necrosis of the liver which we thought might have been caused by the ether given during the operation. Do you remember that case?

DR. MALLORY: Yes, I do, or at least one other like it. On the other hand I think we see a still larger number of cirrhotic deaths in which we cannot demonstrate any evidence of fresh necrosis.

DR. JONES: Physiologically one can show pretty marked change in the blood bilirubin following ether, also in some cases following morphia. I think that ether anesthesia should be avoided in such cases if possible.

DR. WILLIAM B. BREED: Were there any signs of syphilis?

DR. MALLORY: No.

DR. BREED: The syphilitic history is an unusual one.

DR. MALLORY: It is fairly certain that he had it because of the mucous patches and the finding of spirochetes at one time. It is comparatively rare that even in known syphilis we find anything at autopsy, except possibly a penile scar, that we can attribute to syphilis.

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FIFTY YEARS OF PSYCHIATRY AND NEUROLOGY IN BOSTON

THE Boston Society of Psychiatry and Neurology* recently celebrated its fiftieth anniversary by a dinner held at the Longwood Cricket Club. This Society, one of the oldest medical societies in Boston, was established in 1880 at the instigation of Walter Channing and George F. Jelly, two of the outstanding alienists of the period. Closely connected with these two men were T. W. Fisher and Edward Cowles. Of the founders, who called their club the Boston Medico-Psychological Society, the last died in 1921, but the Society itself has been kept alive by a successive list of leaders in both psychiatry and neurology who have formed its membership.

Started as a book and journal club, with a definite trend towards the social side, the early days of the Society were somewhat precarious. In 1891, however, it was reorganized, the name was changed to the present one and about that time certain of the neurologists, including P. C. Knapp and J. J. Putnam, were taken in. The Society prospered and in 1905, after twenty-five years of growth, Walter Channing was able to report that the Society had made distinct contributions to the special subjects in which it was interested. In the last twenty-five years it has grown increasingly important and now serves as an outlet for the reporting of practically all of the neurological, neurosurgical and psychiatric work done in Boston and its vicinity. The character of the papers presented before the Society has changed somewhat in the last years, but this is only natural when one considers the great advances that have been made in both psychiatry and neurology since this Society was formed. One can look forward to a steady growth in the Boston Society of Psychiatry and Neurology, with an increasing usefulness to the medical profession in New England.

*A history of this society appears on page 914 of this issue.

A HISTORY OF MEDICINE IN MASSACHUSETTS

CELEBRATION of the Tercentenary of the founding of Boston is now officially concluded. Undoubtedly numerous benefits have resulted from it; one good thing which has come out of this exhibition of patriotic enthusiasm is "A Brief History of Medicine in Massachusetts."* The Massachusetts Medical Society, by means of a substantial contribution, has brought about the publication of this volume; very fittingly the author, Dr. Henry R. Viets, has dedicated it to the Fellows of the Massachusetts Medical Society.

The book begins with an introductory chapter which gives the background for medicine in the early part of the Seventeenth Century. The opposing schools of Galen and Paracelsus and the influences of such men as Vesalius, Paré and Linacre are described. The second chapter deals with the Colonial Period (1620-1700); the third, with the period from 1700 to 1775. In this period, medicine was divorced from the influence of the ministers and individualism in medicine began to be felt. Chapter IV treats of the American Revolution and after (1775-1800); although brief in years, this period witnessed the formation of the Massachusetts Medical Society and the Harvard Medical School. In the period covered by Chapter V (1800 to 1846) the author finds much of interest: The founding of the Massachusetts General Hospital, the inception of the *Boston Medical and Surgical Journal*, and the important work of Waterhouse on vaccination. This period saw two communications which proved to have far-reaching influence: Jacob Bigelow on "Self-limited Diseases" and Oliver Wendell Holmes on "The Contagiousness of Puerperal Fever." Chapter VI is devoted to the discovery of ether anesthesia; the author's handling of this contro-

*A Brief History of Medicine in Massachusetts by Henry R. Viets, M.D. Published by Houghton Mifflin Co. 194 pages. Price $4.00.

versial subject is remarkable for its fairness to all those who claimed priority in the discovery of general anesthesia, and for its dispassionate statement of what actually happened.

The seventh and last chapter covers the period from 1847 to 1930. We are still too close to the recent years of this period to be able to assay correctly the value of those who have lived and labored within its confines. This chapter, we think, must have been the most difficult to write. So many excellent surgeons and physicians have done their bit faithfully and well; although they may not have made great discoveries, their work entitles them to recognition. It must have been hard for the author to decide where he should draw the line. Those he has honored well deserve mention in any history of medicine in this Commonwealth, and if others equally deserving were not included, let us blame the brevity of the book and not the author's intentions.

It is surprising how much he has packed into these 184 pages; we use the word "packed" advisedly, for the facts are not jammed in, but rather are fitted into their proper places in such a way that the author has been able, in a leisurely, pleasant style, to show his reader the various epochs and the influences which shaped them. We feel that Dr. Viets, in "A Brief History of Medicine in Massachusetts", has produced a scholarly, interesting and exceedingly valuable contribution.

DANGERS IN THE MILK SUPPLY

ALTHOUGH it is believed by public health authorities that the only cows' milk which is safe for human consumption is that which has been pasteurized, there is a disinclination to require this treatment by a large proportion of the people. Certified milk seems to be regarded as a sufficient safeguard because it represents a low bacterial count and retains the full normal vitamin content. Unfortunately certification does not assure freedom from septic contamination and there is abundant evidence that unpasteurized milk has caused much severe illness and many deaths.

In 1929 according to the bulletin of the Children's Bureau, there were forty-four milk-borne epidemics reported in the United States which caused two thousand cases of disease with a mortality of forty-eight and all but one of the epidemics were caused by raw milk. In the October Bulletin of the City of New York Department of Health, there appears a report of about four hundred cases of septic sore throat at Kingston, New York and "these cases were practically all among patrons of two milk peddlers who sell grade A raw milk". Cultures from a dairyman and two employees on a farm supplying these two dealers showed the same organisms as did samples of milk delivered to the dealers.

Suppression of this supply stopped the epidemic.

Less than half the milk used in this country is under efficient sanitary control.

Another strong argument for pasteurized milk is found in the demonstration that about thirty per cent. of some groups of tuberculous patients are infected with bovine bacilli.

In most of the larger cities of the country, pasteurization of milk is required. Rural communities should not be unprotected.

Until scientific preventive health measures are appreciated and applied by the general population, we will continue to see these distressing illustrations of inertia and ignorance.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CLUTE, HOWARD M. B.S., M.D. Dartmouth 1914. F.A.C.S. Surgeon, Lahey Clinic. Assistant Surgeon, New England Deaconess Hospital and New England Baptist Hospital. Address: 605 Commonwealth Avenue, Boston. Associated with him is:

MASON, ROBERT L. A.B., M.D. Harvard 1922. F.A.C.S. Surgeon, Lahey Clinic. Consulting Surgeon, Community Memorial Hospital, Ayer, Mass., and Symmes Arlington Hospital, Arlington, Mass. Address: 605 Commonwealth Avenue, Boston. Their subject is: "Total Gastrectomy for Cancer of the Stomach—A Case Report." Page 909.

VIETS, HENRY R. B.Sc., M.D. Harvard 1916. Instructor in Neurology, Harvard Medical School. Neurologist, Massachusetts General Hospital. His subject is: "Fifty Years of the Boston Society of Psychiatry and Neurology." Page 914. Address: 6 Commonwealth Avenue, Boston.

JORDAN, SARA M. A.B., Ph.D., M.D. Tufts College Medical School 1921. F.A.C.P. Gastroenterologist, Lahey Clinic. Associate Staff, New England Deaconess Hospital, New England Baptist Hospital, and Robert Breck Brigham Hospital. Assistant Physician, New England Hospital for Women and Children. Her subject is: "The Present Status of Peptic Ulcer." Page 917.

WING, FRANK E. A.B. Wesleyan University 1900. Director, The Boston Dispensary. Member, Out-Patient Committee, American Hospital Association. His subject is: "Pay Clinics." Page 920. Address: 25 Bennet Street, Boston.

GILE, JOHN F. A.B., M.D. Harvard 1920. F.A.C.S. Instructor, Dartmouth Medical School. Member Surgical Staff, Mary Hitchcock Hospi-

tal, Hanover, N. H. His subject is: "Pathological Changes of the Endometrium." Page 928. Address: Hanover, New Hampshire.

HUBBARD, OSMON H. M.D. McGill University 1888. Pathologist to Elliott Community Hospital, Keene, N. H. President, New Hampshire Medical Society. His subject is: "Arteriosclerosis of the Coronary Arteries, with Report of Autopsies." Page 932. Address: 101 Main Street, Keene, New Hampshire.

HARRIS, M. L. M.D. Rush Medical College 1882. F.A.C.S. Ex-President, American Medical Association. Professor of Surgery, Chicago Policlinic. His subject is: "The County Medical Society." Page 937. Address: 25 East Washington Street, Chicago, Illinois.

THE BOSTON MEDICAL LIBRARY

THOMAS SYDENHAM
1624-1689

THE influence of the period in which one lives, upon the character and accomplishments of an individual, is strikingly exemplified in the life of Thomas Sydenham. England was in a ferment during his active years and had been for a considerable period. The first twenty years of Sydenham's life must have been coeval with the political unrest that was to culminate in the civil wars—the conflict between the Royalists and Parliament. His family espoused the cause of the Puritans and he himself, and at least two of his brothers, sooner or later became engaged on the side of the Parliamentarians. Revolt against the established order was the keynote of the Puritan's opposition to the Crown. Later on when Sydenham turned his attention seriously to the profession he had chosen the same spirit characterized his attitude to the established order of things medical. He had imbibed enough of Baconian philosophy to prevent his being a conformist and the gist of his contributions to the medicine of his day was in the direction of investigation to Nature's processes and to eliminate idle and ill-considered speculation from the study of disease. Because of this attitude he was designated as the "English Hippocrates" and came in for Boerhaave's unstinted praise whenever he had occasion to refer to him. It is probable that the medical world was due for one of those periodical upheavals which have characterized the progress of medical thought throughout the ages. There had been many "systems" having more or less distinguished supporters and, as is always the case, there had been notable a tendency to drift away from the study of Nature just as there had been, before the time of Hippocrates, whose great contribution to the medicine of his time was the emphasis he laid upon observation. Furthermore this happened to be a period in the world's history when travel and commerce were providing opportunities for the introduction into new territory of diseases which theretofore had not been prevalent. In other words, this was an era when epidemics were rife and it was to his study of them and his application of the principle of observation to their investigation that he was enabled to make the contributions he did to medical progress. There is singularly little known about his early life and training when one considers the importance of his influence. He was born on September 10, 1624 at Wynford Eagle, in Dorset, being the fourth son of William Sydenham, a gentleman of good social position and of considerable influence in the country. His mother and two of his brothers were killed during the civil wars. In 1642 Sydenham enrolled in Magdalen College, Oxford, as a fellow-commoner. In August of that very year the Civil War broke out and his university career was interrupted by his joining the parliamentary colors and returning to his own district. In an engagement at Exeter he was captured and held as a prisoner for nine or ten months. In 1645 his military service ended with the clearing out of all Royalist forces from Dorset by Oliver Cromwell, in which process he and his brothers bore an important part. He was induced at about this time to apply himself to the study of medicine by a Dr. Coxe who happened to be attending his brother. Pursuant to this advice he entered Wadham College, Oxford, as a fellow-commoner on October 14, 1647. Contrary to custom he was created a bachelor of medicine without an Arts degree, in April 1648, by order of the Earl of Pembroke. At some later period he must have secured this degree for he is so credited in the Archives of the College of Physicians. He states that he spent a few years at the University, a part of which time was probably occupied by a second period of military service, and then went up to London to enter upon the practice of medicine. He began practice in Westminster in 1655 but because of his political affiliations he did not attend very closely to his profession at first, for he unsuccessfully stood for a seat in Parliament. He was married in this same year, 1655. In 1659 he appears to have gone over to France where he studied for a couple of years at Montpellier. When he returned to London he settled, eventually, in Pall Mall and made his first serious contribution to medical investigation in his study of certain of the London epidemics. He has been somewhat criticized for having fled from London during the Great Plague, 1655, and his apologists have no very convincing arguments to offer in extenuation. Whether it was cowardly or not it was certainly unfortunate, for he might have made observations of lasting value upon that terrible scourge. It was from a study of disease in its epidemic forms that he seems to have learned most. In 1663 Sydenham obtained a license to practice

from the Royal College of Physicians. He never reached a higher rank in the College than a licentiate as he did not become a full doctor of medicine until he was given the final and full degree from Pembroke College, Cambridge in 1676. As a result of the epidemic, practice became very poor which enabled him to devote himself to the writing of two of the volumes which have helped to make his name famous, viz.: "Methodus Curandi Febres", dedicated to Robert Boyle and "Observationes Medicae." The latter received the approval of the Royal Society and was noted in their transactions and in the same year that it came out in London (1686) it was printed in Amsterdam, which fact served to spread his reputation throughout Europe. He suffered from the time that he was thirty from gout which, with calculus, kept him in anything but robust health all his life. He died on December 29, 1689 in London and was buried in Westminster Abbey. His wife had died some years before; he left three sons, only one of whom followed in his father's footsteps and became a physician. Modesty was one of his characteristics and he devoted himself with all sincerity to the welfare of his fellow men. Bitterness sometimes characterized his treatment of those whom he regarded as his enemies. Intellectually he was of an independent nature and never took any great interest in the sciences which are now so generally recognized as fundamental to medicine. Even Anatomy did not particularly interest him. His greatest work was done in the epidemic diseases, chorea, hysteria and some others. In the treatment of disease he revolutionized the management of smallpox and helped to bring to general acceptance the value of cinchona bark in the agues. Among the prominent men of the period with whom he was on intimate terms may be mentioned Locke and Boyle. He was not disposed to write extensively and it was only as the result of the persistent efforts of his friends that he was induced to publish what he did. It was probably first written in English and later translated into none too good Latin. The original English manuscripts seem to have been lost or destroyed, which accounts for so many Latin editions. During his lifetime he published only five works; after his death a sixth went to press. His memory and services to the medical profession have been perpetuated in the organization of a Sydenham Society which, founded in 1845, had published up to 1857, thirty volumes of his works and the New Sydenham Society, since then, has continued to publish important monographs.

MISCELLANY

THE CASE OF DR. LOUIS E. SCHMIDT

The expulsion of Dr. Louis E. Schmidt of Chicago from the Chicago Medical Society has created much interest among physicians and the public. Dr. Schmidt was connected with a clinic which advertised to the public.

The Chicago Medical Society, after a hearing, expelled Dr. Schmidt. An appeal was taken to the Illinois Medical Society and this body sustained the action of the Chicago Society. An appeal from this decision was made to the Judicial Council of the American Medical Association.

The records of the Judicial Council in dealing with this matter are of general interest and present certain phases of official action which are of interest and we herewith present them in full as submitted by one who was given a copy.

Decision of Judicial Council of American Medical Association

In The Matter of the Appeal of Dr. Louis E. Schmidt from The Decision of the Illinois State Medical Society To The Judicial Council Of The American Medical Association:

The Law specifically provides that the evidence upon which the guilt or innocence of the appellant was based is not subject to review by the Judicial Council. The law provides that the Judicial Council has jurisdiction in the matter of law and procedure but not of fact; to quote, "In all cases which arise (a) between a constituent association and one or more of its component societies; (b) between component societies of the same constituent association; (c) between a member or members and the component society to which said member or members belong, or (d) between members of different component societies of the same constituent association, the Judicial Council shall have appellate jurisdiction in questions of law and procedure but not of fact."

While the rules governing Court procedure, the taking of evidence, etc., must form the basis which guides the action of the Judicial Council, it is not to be presumed that the Judicial Council will give undue credence to mere technicalities but will be governed by a broader concept which at all times must be in keeping with the spirit of the Principles of Medical Ethics which govern the medical profession.

The record shows that the Chicago Medical Society a number of years prior to the beginning of this action had declared the Public Health Institute to be an unethical institution. The record further shows that the appellant had full knowledge of this action on the part of the Chicago Medical Society a number of years before the offense was committed upon which the present action was based.

The Chicago Medical Society notified appellant that charges had been preferred against him "of unethical conduct based on your relations to the Illinois Social Hygiene League and the Public Health Institute" and further notified appellant of the time and place where the Ethical Relations Committee of the Chicago Medical Society would hold a hearing on these charges.

Appellant was present at said hearing in response to said notification and prosecuted a defense before the said Ethical Relations Committee.

Appellant was duly notified of time and place

when the Ethical Relations Committee of the Chicago Medical Society would make its report to the Council of the Chicago Medical Society.

The Ethical Relations Committee reported recommending the expulsion of Appellant based on the hearing held as aforesaid.

Appellant appealed to the Council of the Chicago Medical Society following the report of the Ethical Relations Committee. Appellant waived his right to ten days notice to which he was entitled under the law to prepare for trial and asked for an immediate hearing on his appeal. After being duly apprised of his rights under the law, he again requested an immediate hearing. This request was granted by the Council of the Chicago Medical Society. Appellant was present and prosecuted his appeal.

The action taken by the Council of the Chicago Medical Society following the said hearing was to adopt unanimously the recommendation of the Ethical Relations Committee of the said Society. Appellant then asked for an appeal to the Council of the Illinois State Medical Society. Appeal was granted and due notice was given appellant of the time and place when the Council of the Illinois State Medical Society would hear appellant's appeal. Appellant was present and prosecuted his appeal before the Council of the Illinois State Medical Society.

The action of the Council of the Illinois State Medical Society was to deny unanimously the appeal of appellant.

Appellant then appealed to the House of Delegates of the Illinois State Medical Society and was duly notified of the time and place when the House of Delegates of said Society would hear his appeal. Appellant was present and prosecuted his appeal before the House of Delegates of said Society. The action of the House of Delegates following said hearing was to deny unanimously the appeal of appellant.

Appellant then appealed to the Judicial Council of the American Medical Association. Appellant was duly notified of time and place when the Judicial Council of said Association would hear his appeal from the decision of the Illinois State Medical Society. Appellant was present and prosecuted his appeal before the Judicial Council of said Association.

At the said hearing appellant mildly complained of the correctness of the record made before the Ethical Relations Committee of the Chicago Medical Society. However, the record shows that all of the members of the Ethical Relations Committee of the Chicago Medical Society together with others that were present at said hearing have certified to the correctness of the said record of the Ethical Relations Committee.

If the question is raised that the charges were not sufficiently specific, the record does not show that appellant at any time complained of the procedure that was followed under the law in this case. Appellant did not file any motion to have charges made more specific or any motion asking for a bill of particulars but elected to go to trial on the charges as filed. In order that such a question could have any weight with the Judicial Council it would have been necessary for appellant to have conserved this question at time of his indictment and to have taken exception if forced to go to trial.

Under the law, the evidence upon which was based the innocence or guilt of appellant is not subject to review by the Judicial Council.

The law has been followed and the procedure throughout has been regular; therefore, the appeal of Dr. Louis E. Schmidt is denied and the decision of the Illinois State Medical Society is sustained.

Signed DONALD MACRAE, JR.
Signed F. W. CREGOR.
Signed J. N. HALL.

I hereby certify that this is a correct copy of the Decision of the Judicial Council of the American Medical Association in the matter of the appeal of Dr. Louis E. Schmidt from the decision of the Illinois State Medical Society to the Judicial Council of the American Medical Association.

Signed OLIN WEST, *Secretary.*

Judicial Council
American Medical Association

James B. Herrick, 122 South Michigan Avenue, Chicago, Ill.

George E. Follansbee, Chairman, Guardian Building, Cleveland, Ohio.

J. N. Hall, Metropolitan Building, Denver, Colo.

Donald Macrae, Jr., Council Bluffs Building, Council Bluffs, Ia.

F. W. Cregor, Hume Mansur Building, Indianapolis, Ind.

Dr. Olin West, Secretary, 535 North Dearborn Street, Chicago, Ill.

COPY OF STATEMENT PREPARED AND SUBMITTED TO JUDICIAL COUNCIL BY TWO MEMBERS OF COUNCIL BUT REJECTED BY A MAJORITY VOTE

In The Matter Of The Appeal of Dr. Louis E. Schmidt From The Decision Of The House of Delegates Of The Illinois State Medical Society Sustaining His Expulsion From The Chicago Medical Society:

This case comes before the Judicial Council of the American Medical Association on appeal by Dr. Louis E. Schmidt from the decision of the House of Delegates of the Illinois State Medical Society sustaining his expulsion from the Chicago Medical Society.

The Judicial Council has held several meetings, including a hearing, presentation of documents, briefs, oral evidence and arguments from both sides and has given thorough consideration to the records in this case.

The by-laws of the Chicago Medical Society (Chapter 1, Section 6) and those of the American Medical Association (Chapter IX, Section 10) provide that this Council shall have appellate jurisdiction in questions of law and procedure but not of fact.

The Judicial Council, therefore, is limited to a consideration of and bases its opinion on the questions:

(1) Whether or not the by-laws of the Chicago

Medical Society and the Illinois State Medical Society were in harmony with the Constitution of the American Medical Association and in sympathy with ordinary legal procedure:

(2) Whether or not the procedure taken under those by-laws was properly and legally followed as written therein:

(3) Whether or not there has been a correct interpretation of law as applied to the facts submitted in evidence to the various tribunals that have previously passed upon this case.

Section 6 of Chapter 1 of the by-laws of the Chicago Medical Society, under which Dr. Schmidt's expulsion was voted, provides in part as follows:

"No punitive action against any member shall be taken until and unless *specific charges* against him in writing have been filed with the Secretary of this Society. On receipt of the charges the Secretary shall send a *complete and accurate* copy of the same to the accused and one to the Chairman of the Ethical Relations Committee."

Charges against Dr. Schmidt were duly filed with the Secretary of the Chicago Medical Society and notice of the same was duly given Dr. Schmidt by letter of the Secretary, dated March 26, 1929, reading as follows:

"The Council, at its December meeting, preferred charges of unethical conduct against you, based on your relations to the Illinois Social Hygiene League and the Public Health Institute.

(Charge I) "It is charged that your conduct violated Article 2 of the Constitution of the Chicago Medical Society which states, among other things, that the object of the Society is to 'safeguard the material interests of its members.'

(Charge II) "It was felt that your action further violated Chapter 2, Article 6, Section 2 of the Principles of Medical Ethics of the American Medical Association, which reads in part as follows: 'It is unprofessional for a physician to dispose of his services under the conditions which interfere with reasonable competition among the physicians of a community.'

(Charge III) "Chapter 2, Article 1, Section 4 of the Principles of Medical Ethics which reads as follows:

'Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

'It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.'

(Charge IV). "Chapter 2, Article 1, Section 7, Principles of Medical Ethics of the American Medical Association which reads as follows:

'Physicians should expose without fear or favor, before the proper medical or legal tribunals, corrupt or dishonest conduct of members of the profession. Every physician should aid in safeguarding the profession against the admission to its ranks of those who are unfit or unqualified because deficient either in moral character or education.'

"The Chairman of the Ethical Relations Committee will inform you of the time and place of hearing."

In the letter notifying Dr. Schmidt that charges had been preferred against him there are *indefinite* charges. *(Charge I)* that his "conduct" violated a specific provision of the Constitution of the Chicago Medical Society in the matter of "safeguarding the material interests of its members", and *(Charge II)* that, "it was felt that your action violated" specifically, "Chapter 2, Article 6, Section 2 of the Principles of Medical Ethics" referring to the disposition of a physician's services under conditions which interfere with reasonable competition. The balance of the letter can only by implication be considered charges. It consists of simply quotations in full of statutes, or pronouncements from the Principles of Medical Ethics covering various ethical principles *(Charge III)*, solicitation of patients by different means, from the distribution of professional cards to boasting of cures, and *(Charge IV)* exposing corrupt and dishonest members of the profession and safeguarding the profession against the admittance to it of the unfit. The information as to what "conduct", what "action", or what specific offense in the sections quoted from the Principles of Medical Ethics, is left to the imagination.

In his argument before the Judicial Council, Dr. Schmidt stated that following the receipt of the letter of March 26, 1929, notifying him that charges

had been preferred, he repeatedly asked the proper officials of the Chicago Medical Society to be supplied with a copy of the charges but was always informed that he already had them in that letter. This statement was not denied by counsel for the Illinois State Medical Society. Dr. Schmidt's repeated request, before going to trial, for a copy of the charges, is sufficient evidence of his objection to the vagueness of the charges against which he should prepare a defense.

Plainly the trial of Dr. Schmidt must be limited to the charges preferred:

As to the first two charges having to do with economic matters, we are presented with the singular spectacle of insistence by the representative of the Illinois State Medical Society, that these economic charges are not involved, coupled with equal insistence by Dr. Schmidt upon answering them. Most of the testimony of the trial, and the brief presented by Dr. Schmidt to the Judicial Council supporting his appeal were concerned with the cost of medical care, public health needs and philanthropic activities relating to *Charges I* and *II*, which the Chicago Medical Society and the Illinois State Medical Society waived, basing Dr. Schmidt's expulsion only on the charge of unethical conduct as contained in *Charge III* covering solicitation of patients. For the purpose of our decision, therefore, the economic charges, although originally made, must be regarded as having been waived, and there is no occasion for us to consider them. Neither are we concerned with the final charge, for it is not claimed that there is any evidence that Dr. Schmidt has erred in failing to expose corrupt and dishonest conduct of members of the profession nor in failing to aid in safeguarding the profession against the admittance to its ranks of those who are unfit or unqualified. We may add that in finding Dr. Schmidt guilty it was unfortunate the Chicago Medical Society did not state of which offense or offenses and on which charge or charges he was found guilty. Failure to do this opened the way to the vast amount of newspaper publicity and comment unjustly derogatory to the profession as a whole that clouded and obscured the public mind as to the principles at issue and the merits of the case.

The matter for decision by this Council therefore resolves itself into a consideration of *Charge III*. No particular action is previously mentioned in the charges nor does it later appear what specific action is cited against him. The charge as made is a general charge. It is vague and indefinite. It is not specific as required by the by-laws of the Chicago Medical Society and by ordinary legal usage. The same opinion would hold in respect to the other three charges were they not removed from consideration. Lest this reasoning seem technical it should be remembered that it is one of the fundamentals of Anglo-Saxon liberty and law that one accused shall have a fair trial. First of all he must be apprised of the accusations against him and cannot be tried for something not embraced in these accusations. This is the very purpose of the by-laws of the Chicago Medical Society requiring *"specific charges"*, "a complete and accurate copy", and notice of the same to the accused member. The wisdom of this requirement is fairly illustrated by the case before us. The charges included the economic ones relating to the *"material interests"* of the members of the Chicago Medical Society, and *"reasonable competition among physicians of the community."* These, however, have been waived. If the case were to be tried solely on the basis of ethics, excluding economic features, the ethical questions involved should have been more definitely and carefully stated.

The By-laws of the American Medical Association (Chapter IX, Sec. 1) state:

> "The Judicial Council shall have appellate jurisdiction in questions of law and procedure but not of fact."

On the basis, therefore, of faulty procedure, and without entering into the question of guilt or innocence, the appeal of Dr. Louis E. Schmidt from the decision of the Council and House of Delegates of the Illinois State Medical Society, is hereby sustained.

Signed GEO. EDW. FOLLANSBEE, *Chairman.*
Signed JAMES B. HERRICK.

PRINCIPAL CAUSES OF DEATH IN THE REGISTRATION AREA: 1929

The Department of Commerce announces that 1,386,363 deaths occurred in 1929 in the registration area in continental United States, corresponding to a rate of 11.9 per 1,000 population as compared with 12.1 in 1928.

This area in 1929 comprised 46 states, the District of Columbia, and 9 cities and in nonregistration states, with an estimated population on July 1, 1929, of 116,275,139, or 95.7 per cent. of the total population; in 1928 the registration area included 95.3 per cent. of the total population.

The death rate from all causes per 100,000 population decreased from 1,207.1 in 1928 to 1,192.3 in 1929. This net decrease was almost entirely balanced by increases in influenza (from 45.3 to 55.5), diseases of the heart (208.3 to 210.9), and meningococcus meningitis (2.6 to 4.5). Deaths from these three diseases alone caused 21.2 per cent. of all deaths in 1928 and 22.7 per cent. in 1929.

Among the epidemic and endemic diseases listed in this summary, 7 showed lower rates in 1929 than in 1928, the outstanding one being for measles (5.4 to 2.5) which caused less than half as many deaths in 1929. Decreases were shown also for typhoid and paratyphoid fever, diphtheria, acute anterior poliomyelitis, dysentery, lethargic encephalitis, and malaria. Other epidemic and endemic diseases showed increased rates, among them whooping cough, scarlet fever, and erysipelas.

Decreases among other important causes were for pneumonia, all forms (from 98.2 in 1928 to 91.7 in 1929), nephritis (95.3 to 91.2), congenital malformations and diseases of early infancy (65.8 to 62.4), tuberculosis, all forms (79.4 to 76.0), diarrhea and enteritis, under 2 years (20.7 to 17.9) diabetes mellitus (19.0 to 18.8), cancer (96.1 to 96.0), and pellagra (6.1

to 5.8). Deaths from alcoholism decreased from a rate of 4.1 in 1928 to 3.7 in 1929.

Deaths from accidental and unspecified external causes increased from 79.4 to 80.9. The types of accidents which showed the most noticeable increases were automobile accidents, excluding collisions with railroad trains and street cars (20.8 to 23.3) and accidental falls (14.1 to 14.6). A slight decrease was shown for deaths from drowning (7.1 to 6.2).

MORTALITY RATES

Telegraphic returns from 78 cities with a total population of thirty-five million for the week ending October 18 indicate a mortality rate of 10.9 as against a rate of 11.7 for the corresponding week of last year. The highest rate (21.6) appears for Nashville, Tenn., and the lowest (5.7) for Waterbury, Conn.

The annual rate for 78 cities is 12.0 for the forty-two weeks of 1930, as against a rate of 12.8 for the corresponding weeks of 1929.

A COMPLIMENTARY DINNER TO MR. X. HENRY GOODNOUGH

On the evening of November 13 a complimentary dinner to Mr. X. Henry Goodnough will be attended by the friends of this gentleman, who has given more than forty-five years of distinguished service to the State of Massachusetts in the field of public health engineering.

During Mr. Goodnough's administration of his department the State public health officials have been guided and directed in the great engineering problems which have given to this Commonwealth efficient water supplies and other healthful services.

All who are appreciative of the work of this most efficient public servant should communicate with Mr. Charles W. Sherman, Chairman of the Committee of Arrangements, and secure tickets.

CORRESPONDENCE

CONDITIONS AND OPINIONS RESPECTING MALPRACTICE INSURANCE

The *New England Journal of Medicine.*

Gentlemen:

The following may be of interest to you.

As you already know, the U. S. Fidelity and Guaranty Company charged a flat rate for Malpractice insurance in Massachusetts, from November 1921 to November 1927. In analyzing the claims at that time we found that in certain specialties the loss ratio was much higher than others. Therefore, we arranged our rates in accordance, feeling it only fair for each group to pay its share of the loss ratio and no more.

We have again gone over the claim cards (500 in number) by years, groups and causes, which is all very interesting and gives us a better average than in 1927. We have also found that many of the doctors were improperly rated and many have changed their specialty. About 12% of the claims were due to fractures.

Of the five hundred claims filed against our policy holders there are about one hundred and fifty awaiting trial. Two of these date back to 1921 and have been in court four times, and are now before the Supreme Court. Three are dated in 1923; five in 1924 and seven in 1925, etc.

We were hoping that in 1927 conditions would change and that the rates as arranged would be adequate, but unfortunately this expectation has not been realized. Several of the groups as arranged in 1927, will however, remain the same. Some have been reduced and some increased.

The idea of rating the doctors by specialties, in our opinion, is the only fair method, and was done after long and careful consideration and thorough discussion with many members of the profession. In all other classes of insurance, the premiums are based on the loss ratio and hazard of the risk. The average premium on the new arrangement is less than charged by most companies in 1921, and several of the groups are less than one-half.

New rates and policies will be effective November 10, 1930. We regret that any change in rates must be made at the present time, but under existing conditions it is necessary.

The Boston papers of September 13, 1930, quoted Governor Allen as saying: "In my opinion, the number of unscrupulous doctors and lawyers who today thrive on fake accident claims is a reproach to our administration of justice." He was speaking particularly about automobile claims but this opinion also applies to malpractice claims. If conditions can be improved, and we believe they can be by the proper coöperation of the State Board of Medicine and the Bar Association, rates will be reduced in accordance with the loss ratio.

In my opinion Medical Societies should follow the recommendations made in 1929 by Doctor Rushmore that an investigator be employed who should attend every malpractice trial and keep a record of all malpractice claims, particularly where other doctors are involved. Conditions will not improve until something drastic is done.

As malpractice claims are increasing, may I make the following suggestion to the doctors.

1st. Many claims are the direct result of an unguarded remark of another doctor, dentist, technician or nurse. Therefore, refrain from expressing your opinions and instruct nurses and hospital attendants to be very careful about criticising the work of doctors. Words once spoken cannot be withdrawn.

2nd. Keep very accurate records of every call and office visit. This is very important, not only for your own defense many years after, but to help a brother who is in trouble on the same case.

3rd. If a threat or claim is made against you, *do not admit any liability or say you are insured.* This may be used to your detriment in case of trial.

4th. Notify your insurance company immediately upon suspicion of any trouble. Their experience in handling these cases shows that prompt investigation and attention as soon as trouble ap-

pears often makes satisfactory adjustment better for both the doctor and the company.

5th. Have x-rays of all injuries with detailed records, especially fractures.

6th. Do not sue for the collection of a bill until two years after treatment.

GEORGE H. CROSBIE.

RECENT DEATHS

O'CALLAGHAN—DR. MARY VINCENT O'CALLAGHAN, a practitioner of Worcester from 1885 to the present time, was run down by an automobile on a street of that city, October 25, 1930 and died from the injuries she received, October 28. She was one of the early woman practitioners of the Catholic faith to practice in Worcester. She was born in Leicester in 1852, was educated in the public schools of Worcester and at the Worcester Classical School. She taught school for a time and then entered the Woman's Medical College of Pennsylvania in Philadelphia where she received her M.D. in 1885. Settling in Worcester she became a charter member of the Worcester Woman's Club, of the Catholic Women's Club and visiting physician to the State Industrial School for Girls at Lancaster, a position she held for 12 years. With her brother, the late Dr. Thomas A. O'Callaghan she was instrumental in founding St. Vincent Hospital, on the staff of which she served until the time of her death. On the organization of the Irish Land League movement by Charles Stewart Parnell, Dr. O'Callaghan was prominent in the Worcester branch of the league and took part in the reception to Worcester of Parnell, John Dillon, Michael Davitt and William O'Brien, when they visited the city. She held fellowship in the Massachusetts Medical Society from the time she settled in practice. She is survived by eight nieces and nephews, one of the nieces being Dr. Clara P. Fitzgerald, a Fellow of the State medical society, in Worcester.

CURTIS—DR. HENRY FULLER CURTIS, since 1891 a practitioner of East Somerville and Somerville, died at the home of his daughter in Framingham after a long illness, October 29, 1930 at the age of 66. Born at Kennebunk, Maine, August 22, 1864 he was graduated from Colby College in 1887 and from Harvard Medical School in the class of 1891, having served as house officer at the Carney Hospital in 1890-1891. After 1903 Dr. Curtis was a visiting physician to the Somerville Hospital and was a member of the school board. His wife, Jenny K. Curtis died in his daughter's home only two weeks before her husband. Dr. Curtis is survived by two daughters. He was a Fellow of the Massachusetts Medical Society and of the American Medical Association and also a Mason.

NEWS ITEMS

AN HONOR TO DR. WILINSKY

Dr. Charles F. Wilinsky, Deputy Health Commissioner of Boston and Director of the Beth Israel Hospital and the White Health Units of Boston, has been appointed Chairman of the Child Hygiene Section of the American Public Health Association.

DR. MEAKER PRESENTS A PAPER BEFORE THE LUZERNE COUNTY MEDICAL SOCIETY—Dr. Samuel R. Meaker, Professor of Gynaecology at the Boston University School of Medicine, read a paper November 5 before the Luzerne County Medical Society at Wilkes-Barre, Pennsylvania, on Modern Tendencies in Gynaecology.

NOTICES

REMOVALS

Dr. Joseph P. Yaffe announces the removal of his offices to Room 830, Chamber of Commerce Building, 80 Federal Street, Boston, Mass.

Dr. William E. Fay has closed his office at 366 Commonwealth Avenue, Boston, on account of health and has retired to his home at 24 Orient Avenue, Melrose.

UNITED STATES CIVIL SERVICE EXAMINATION

Senior Toxicologist—$4,600 to $5,400 a Year

Applications must be on file with the U. S. Civil Service Commission at Washington, D. C., not later than November 26, 1930, for the position of Senior Toxicologist, and also for that of Toxicologist.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

REPORT AND NOTICES OF MEETINGS

THE EDWARD K. DUNHAM LECTURES 1930

The seventh annual series of the Dunham Lectures was delivered at the Harvard Medical School at five o'clock on the afternoons of October 15 and 17. Dr. Walter B. Cannon, presiding, explained that these lectures were founded in 1923 in memory of Dr. E. K. Dunham, a graduate of Harvard Medical School, for the purpose of promoting the medical sciences and furthering understanding and coöperation among research workers in this and foreign countries. He then introduced the guest lecturer, Dr. Franz Knoop, Professor of Physiological Chemistry, and Director of the Institute of Physiological Chemistry at Tübingen, Germany.

Dr. Knoop defined the aim of physiological chemistry as the erection of an uninterrupted row of chemical equations to represent the reactions undergone by substances taken in food, through all the stages of digestion, absorption, synthesis, storage, destruction and excretion. The qualitative method has been carried on by decomposition produced by oxidation outside of the body. The disadvantage of this method has been that one is attempting to study living processes as applied to substances already dead; hence,

there have been many steps in intermediary metabolism which have been imperfectly understood.

To overcome this difficulty the idea was conceived of combining simple fatty acids with an incombustible group and feeding this compound to animals to be followed by an examination of the urine for the amount of unoxidized residue. Results obtained from this method led to the conclusion that oxidation of a fatty acid chain occurs at the beta-carbon atom.

The study of the intermediary products of protein metabolism has likewise presented many difficulties and is still upon a somewhat uncertain basis. It is generally agreed that the oxidation of the amino acids occurs in the alpha position and is accompanied by the removal of the amino group and progresses to the formation of alpha ketonic acids. After this first stage the further oxidation often proceeds by beta oxidation as with the fatty acids. The lecturer illustrated this in considerable detail by a correlation of isolated facts, regarding the metabolism of the various amino acids, which have been recorded by many previous investigators.

He also pointed out that some acids recognized as intermediates in the oxidation of amino acids likewise arise from the utilization of carbohydrates. Thus similar chemical mechanisms are involved in the oxidation of the various kinds of food stuffs in the body and therefore the conversion of one kind into another is made more comprehensible.

HARVARD MEDICAL SCHOOL

LECTURES ON "THE CARE OF THE PATIENT"

Amphitheater C at 5 P. M. as follows:

Wednesday, November 12—Dr. David Cheever, Associate Professor of Surgery, Harvard Medical School.

Wednesday, November 19 — Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania Medical School.

THE GEORGE W. GAY LECTURES ON "MEDICAL ETHICS"

Amphitheater C at 5 P. M. as follows:

Wednesday, December 3—Dr. William H. Robey, Clinical Professor of Medicine, Harvard Medical School.

Wednesday, December 10—Dr. Robey.

THE WILLIAM HARVEY SOCIETY

FOUNDED BY THE STUDENTS OF TUFTS MEDICAL SCHOOL TO FURTHER INTEREST IN THE ART OF MEDICINE

LECTURES AT THE BETH ISRAEL HOSPITAL

FRIDAY, NOVEMBER 14, 1930, 8.00 P. M.

Speaker: Dr. Howard W. Haggard, Associate Professor of Applied Physiology, Yale Medical School.

Subject: "Medicine Through the Ages."

Chairman: Dr. Nathan Sidel, Instructor in Medicine, Tufts Medical School.

Dr. Haggard: Ph.B., Yale, 1914; M.D., Yale, 1917; captain Chemical Warfare Service; Associate Professor of Applied Physiology, Yale Medical School; conducts a course in the undergraduate school at Yale called "Industrial Physiology"; author of: "Devils, Drugs and Doctors"; "The Science of Health and Disease"; "Noxious Gases"; "Are You Intelligent?"

FRIDAY, DECEMBER 12, 1930, 8.00 P. M.

Speaker: Dr. Elliott P. Joslin, Clinical Professor in Medicine, Harvard Medical School.

Subject: "The Carbohydrates in the Body."

Chairman: Dr. David Rapport, Professor of Physiology, Tufts Medical School.

Dr. Joslin: B.A., Yale, 1890; Ph.B., Yale, 1891; M.D., Harvard, 1895; has practised medicine in Boston since 1895; Clinical Professor of Medicine, Harvard Medical School since 1922; Physician to the New England Deaconess Hospital; Consulting Physician to the Boston City Hospital; Lt. Col., M. C., U. S. A., 1918. Author of: "The Treatment of Diabetes Mellitus"; "A Diabetic Manual".

FRIDAY, JANUARY 9, 1931, 8.00 P. M.

Speaker: Dr. George H. Bigelow, Commissioner of Public Health for the Commonwealth of Massachusetts.

Subject: "Adult Life."

Chairman: Dr. Clarence L. Scamman, Lecturer in Public Health, Tufts Medical School.

Dr. Bigelow: M.D., Harvard, 1916; Doctorate in Public Health, Harvard; formerly Director of Medical Work, Antioch College, Ohio; formerly Director of the Cornell Clinic, New York City; Deputy Commissioner of Public Health and Director of the Division of Communicable Diseases for the Commonwealth of Massachusetts; since 1925 has been Commissioner of Public Health.

FRIDAY, FEBRUARY 13, 1931, 8.00 P. M.

Speaker: Dr. Frank H. Lahey, of the Lahey Clinic.

Subject: "Goitre." To be illustrated with slides.

Chairman: Dr. Edward M. Hodgkins, Assistant Professor of Surgery, Tufts Medical School.

Dr. Lahey: M.D., Harvard, 1904; surgical training, Boston City Hospital; later on surgical staff of the Boston City Hospital; formerly Head of the Department of Surgery and Professor of Surgery, Tufts Medical School; formerly Clinical Professor of Surgery, Harvard Medical School; now Director of the Lahey Clinic; Surgeon to the New England Baptist Hospital and Surgeon to the New England Deaconess Hospital.

FRIDAY, MARCH 13, 1931, 8.00 P. M.

Speaker: Dr. Samuel R. Meaker, Professor of Gynaecology, Boston University Medical School.

Subject: "The Social Aspect of Gynaecology."

Chairman: Dr. Louis E. Phaneuf, Professor of Gynaecology, Tufts Medical School.

Dr. Meaker: B.A., Princeton University, 1911; M.D., Harvard, 1915; Member Royal College of Surgeons of England; Fellow of the American College of

Surgeons; Fellow of the British College of Obstetricians and Gynaecologists.

FRIDAY, APRIL 10, 1931, 8.00 P. M.

Speakers: Dr. Herbert S. Hutchinson of Milford, New Hampshire. Dr. Henry A. Christian, Physician-in-chief, Peter Bent Brigham Hospital.

Subject: "The Old and the New in General Practise."

Chairman: Dr. Cadis Phipps, Professor of Medicine, Tufts Medical School.

Dr. Hutchinson: A.B., Dartmouth College, 1875; M.D., Bellevue Hospital Medical College, 1880; Dr. Hutchinson also studied at the Maine Medical School. He knew and worked with such men as Austin Flint, Janeway, Alexander Mott, Gerrish, Thomas, Erskine Mason, James R. Wood, J. L. Smith, Sayre, Mason, Van Buren, Noyes, Loomis, Robinson and William T. Lusk.

Dr. Christian: A.B., A.M., Randolph-Macon College, 1895; M.D., Johns Hopkins, 1900; A.M., Harvard, 1903; Dean, Harvard Medical School, 1908-1912; now Hersey Professor of the Theory and Practise of Physic; Physician-in-Chief, Carney Hospital, 1907-1912; Physician-in-Chief, Peter Bent Brigham Hospital since 1911.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY

The meetings for the ensuing year are as follows: December 4, 1930, January 8, 1931, February 5, 1931, March 5, 1931, April 2, 1931, May 7, 1931.

All meetings begin at 12 noon. The February meeting will be held at the Quincy City Hospital. All other meetings will be held at the Norfolk County Hospital, South Braintree.

The censors will meet on May 7 at 11:30 A. M. at the Norfolk County Hospital, South Braintree.

NATHAN R. PILLSBURY, *Secretary.*

1930—THE AMERICAN ACADEMY OF PHYSICAL THERAPY

PROGRAM OF THE ANNUAL CONVENTION

Wednesday, Thursday, Friday
November 12, 13, 14,
Hotel Statler, Boston, Mass.

OFFICERS

President
William D. McFee, M.D., Boston, Mass.
1st Vice President
Grant E. Ward, M.D., Baltimore, Maryland.
2nd Vice President
Groesbeck F. Walsh, M.D., Fairfield, Alabama.
Secretary and Treasurer.
Thomas L. Smyth, M.D., Allentown, Pa.
Directors For Three Years
*Burt W. Carr, M.D., Washington, D. C.
Harry C. Westervelt, M.D., Pittsburgh, Pa.

*Deceased.

Directors For Two Years
Byron S. Price, M.D., New York City.
Arthur H. Ring, M.D., Arlington Heights, Mass.
Directors For One Year
Charles P. Hutchins, M.D., Syracuse, N. Y.
Floyd O. Reed, M.D., Yonkers, N. Y.

PROGRAM

WEDNESDAY MORNING, NOVEMBER 12

Parlors A and B
9 o'clock

1. Presidential Address.
William D. McFee, M.D., Boston.
2. "Sun Rays, their present use and future possibilities."
William H. Watters, M.D., Boston.
Discussion to be opened by E. T. Wyman, M.D., Boston.
3. "Radiant Heat and Light."
E. J. Libbert, M.D., Lawrenceburg, Ind.
Discussion to be opened by J. Resnik, M.D., Boston.
4. "The Diagnosis and Treatment of Subacromial Bursitis" (Lantern Slides).
G. E. Haggart, M.D., Boston. (By invitation.)
Discussion to be opened by Otto Hermann, M.D., Boston.

12:15 p. m. Executive session for members only.

WEDNESDAY AFTERNOON, NOVEMBER 12

Parlors A and B
2 o'clock

1. "Physical Therapy In The Treatment of the Mentally Ill."
George M. Kline, M.D. (State Commissioner of Mental Diseases.) (By Invitation.)
Discussion to be opened by Stanley Cobb, M.D., Boston.
2. "Physical Therapy of Lumbar and Sacro-Iliac Strain."
Claude L. Payzant, M.D., Boston.
Discussion to be opened by P. R. Burke, M.D., Quincy.
3. "Observation of Physical Therapy In European Countries."
Harold D. Corbusier, M.D., Plainfield, N. J.
Discussion to be opened by A. B. Hirsh, M.D., N. Y. City.
4. "Conservative Treatment in Gynecology With Special Reference to Cancer."
Arthur L. Brown, M.D., Winchester.
Discussion to be opened by George Leland, M.D., Boston.

THURSDAY MORNING, NOVEMBER 13

Georgian Room
9 o'clock

Section of Electro-Surgery

Chairman
Grant E. Ward, M.D., Baltimore, Maryland.

1. "When is Endothermy Indicated?"
George W. Wyeth, M.D., New York City.
2. "The Use of Electrosurgery In Urology." (With Lantern Slides and Motion Pictures.)
Claude W. Collings, M.D., New York City.

3. "Electrosurgery in Genito-Urinary Diseases."
Winfield Scott Pugh, M.D., New York City.
4. "Electrosurgery in the Treatment of Bladder Tumors."
Edward L. Young, M.D., Boston, Mass.
Discussion of these subjects will be opened by William L. Clark, M.D., Philadelphia; Arthur H. Crosbie, M.D., Boston; G. G. Smith, M.D., Boston; P. N. Papas, M.D., Boston; Ernest M. Daland, M.D., Boston.
12:15 Executive Session.

THURSDAY AFTERNOON, NOVEMBER 13

Georgian Room
2 o'clock

1. "The Use of the Bovie Electrosurgical Knife In Pelvic Surgery."
DeWitt G. Wilcox, M.D., Newton Center.
2. "Electrosurgery and Gynecology."
Mortimer M. Hyams, M.D., New York City.
3. "Electrosurgery in Diseases of the Rectum and Anus."
George E. Deering, M.D., Worcester.
4. "Electrosurgery in General Surgery."
George A. Moore, M.D., Brockton.
Discussion of these subjects will be opened by Thomas L. Smyth, M.D., Allentown, Pa.; Grantley W. Taylor, M.D., Boston; Edward H. Trowbridge, M.D., Worcester; Irving Walker, M.D., Boston.

FRIDAY MORNING, NOVEMBER 14

Georgian Room
9 o'clock

1. "Action of High Frequency Currents on Living Tissues."
Byron S. Price, M.D., New York City.
Discussion to be opened by Martin Edwards, M.D., Boston.
2. "Case Report of Hydronephroma With Radium and X-ray Treatment and Autopsy."
Arthur H. Ring, M.D., Arlington Heights, Mass.
Discussion to be opened by Charles Whelan, M.D., Boston.
3. "Contra-Indications of Physical Therapy in Orthopedics." (Lantern Slides.)
R. Nelson Hatt, M.D., Boston—Chief Surgeon Shriners' Hospital, Springfield, Mass. (By Invitation.)
Discussion to be opened by Martin Edwards, M.D., Boston.
4. "Physical Therapy of Fresh Fractures."
Frederic J. Cotton, M.D., Boston.
Discussion to be opened by Otto Hermann, M.D., Boston.
12:15 p. m. Executive Session.

FRIDAY AFTERNOON, NOVEMBER 14

Georgian Room
2 o'clock

1. "Hodgkin's Disease."
Frederick W. O'Brien, M.D., Boston.
Discussion to be opened by Henry Jackson, Jr., M.D., Boston.
2. "Further Observation by Brachial Plexus Pain."
Harry Westervelt, M.D., Pittsburgh, Pa.
Discussion to be opened by A. H. Ring, M.D., Arlington Heights, Mass.
"Diathermy Research in the Treatment of the Mentally Ill."
C. F. Perkins, M.D., Worcester.
Executive Session.
Installation of officers for members only.

An exhibit of physical therapy apparatus and accessories will be held in Room C adjoining the convention room. This exhibit has been carefully chosen for its instructive value and those attending are requested to give the exhibitors all due interest and attention.

EXHIBITORS

C. E. Bailey Company, 98 Brookline Avenue, Boston, Mass.

Cameron Surgical Specialty Company, 666 West Division Street, Chicago, Illinois.

General X-ray Corp., 285 Columbus Avenue, Boston, Mass.

General Electric X-ray Corp., 711 Boylston Street, Boston, Mass.

Hanovia Chemical Company, 118 Washington Street, Malden, Mass.

E. F. Mahady Company, 851 Boylston Street, Boston, Mass.

New England X-ray Corp., 30 Huntington Avenue, Boston, Mass.

Surgeons' & Physicians' Supply Co., 208 Newbury Street, Boston, Mass.

ANNOUNCEMENTS

Registration—All physicians attending are requested to register.

The time limit for reading each paper is twenty minutes. Each individual discussion is limited to five minutes. Any physician taking part in discussion will first announce his name and address.

Information concerning hospitals, clinics, and places of interest and entertainment may be obtained at the Registration Desk.

An information dinner party will be held Thursday evening, November 14. Further information regarding this will be given out later.

COMMITTEES

Committee on Arrangements:
Vernon C. Stewart, M.D., Woburn, Mass.
Frederick W. O'Brien, M.D., Boston, Mass.

Program Committee:
Byron S. Price, M.D., New York City (Chairman).
Arthur L. Brown, M.D., Winchester, Mass.
William F. Roberts, St. John, N. B.

Committee on Legislation:
Harold D. Corbusier, M.D., Plainfield, N. J. (Chairman).
Harry C. Westervelt, M.D., Pittsburgh, Pa.

Hospitality Committee:
Arthur H. Ring, M.D., Arlington Heights, Mass. (Chairman).
Thomas E. Hays, M.D., Burlington, Vt.
Charles P. Hutchins, M.D., Syracuse, N. Y.
(And all members of the American Academy of Physical Therapy)

Publicity Committee:
Thomas L. Smyth, M.D., Allentown, Pa. (Chairman).
A. B. Hirsh, M.D., New York City.
George E. Percy, M.D., Salem, Mass.

Membership Committee:
William D. McFee, M.D., Boston, (Chairman).
Grant E. Ward, M.D., Baltimore, Maryland.
Thomas L. Smyth, M.D., (ex officio).

Research Committee:
Byron S. Price, M.D., New York City (chairman).
Arthur L. Brown, M.D., Winchester, Mass.
(Other members to be appointed by the chairman.)

MASSACHUSETTS GENERAL HOSPITAL

Clinical Meeting

The evening Clinical Meetings of the Massachusetts General Hospital to be held on the second Thursday of the month will be resumed. The first meeting is scheduled for November 13 and will be devoted to various aspects of the problem of Malignant Disease, particularly with reference to the methods of treatment which have been proposed during the past few years. The detailed program follows:

FIRST MEETING

8:15—Presentation of Cases.
8:40—Dr. Henry Jackson, Jr.—Biological Aspects of Cancer.
9:00—Dr. Reginald Smithwick and Dr. J. C. Aub—The Lead Treatment of Cancer. (Blair Bell.)
9:10—Dr. E. M. Daland—The Tuberculin Treatment of Cancer.
9:18—Dr. Charles C. Lund—The Fischer-Wasel Oxygen Treatment of Cancer.
9:26—Dr. O. O. Meyer—(1) The Use of Extracts of Adrenal Cortex in the Treatment of Cancer. (2) The Treatment of Cancer with Thymus Extract (Hansen).

SOCIETY MEETINGS
CONGRESSES AND CONFERENCES

December 3-June 3—Cardiac Course. See page 854, issue of October 23.

November 10—Atlantic Dermatological Conference. See page 801, issue of October 16.

November 12, 13, 14—The Annual Convention of the American Academy of Physical Therapy. See notice on page 956.

November 12 and 19—Harvard Medical School. Lectures on "The Care of the Patient". See page 955.

November 13—Massachusetts General Hospital. Clinical meeting. See notice above.

November 14-April 10—The William Harvey Society. See page 955.

November 19—New England Obstetrical and Gynecological Society. See page 855, issue of October 23.

December 3 and 10—Harvard Medical School. The George W. Gay Lectures on "Medical Ethics". See page 955.

March 23-27, 1931—Fifteenth annual clinical session of the American College of Physicians. Detailed notice appears on page 790, issue of April 17.

July 27-31, 1931—Third International Congress of Radiology, Paris. Complete notice appears on page 385, issue of August 21.

DISTRICT MEDICAL SOCIETIES

Bristol North District Medical Society

April 16, 1931—Taunton Woman's Club.
September 17, 1931.

Franklin District Medical Society

November, 1930-May, 1931—The meetings are held on the second Tuesdays of November, January, March and May at 11 A. M. at the Weldon Hotel, Greenfield.

Middlesex East District Medical Society

November 12—New England Sanitarium and Hospital, Stoneham.
January 14, 1931—Harvard Club of Boston.
March 11, 1931—At Reading.
May 13, 1931—At Wakefield.

Norfolk South District Medical Society

December 4-May 7—See page 956.

Suffolk District Medical Society

November 19-April 29—Combined meetings with the Boston Medical Library. These meetings will be held as specified below on Wednesdays, at 8:15 P. M.
November 19, 1930—Clinical Program, Massachusetts Memorial Hospitals.
December 17, 1930—Clinical Program, Boston Dispensary.
January 28, 1931—General meeting in association with the Boston Medical Library at the Boston Medical Library. "The Practice of Medicine in Relation to Public Health Activities." Speakers to be announced later.
February 25, 1931—Clinical Program, Boston City Hospital.
March 25, 1931—Clinical Program, Beth Israel Hospital.
April 29, 1931—Annual Meeting. Election of Officers. Boston Medical Library.

The medical profession is cordially invited to attend all of these meetings.

GEORGE S. DERBY, M.D.,
President, Suffolk District Medical Society.
LELAND S. McKITTRICK, M.D.,
Secretary, Suffolk District Medical Society.
HILBERT F. DAY, M.D.,
Boston Medical Library.

BOOK REVIEWS

Applied Bacteriology for Nurses. By Charles Frederick Bolduan, M.D. 6th Edition. Published by W. B. Saunders Co. Price $2.00.

Dr. Bolduan's "Applied Bacteriology for Nurses," is most practical. The relation of bacteria to disease and its transmission is very clearly and interestingly shown. There is an excellent chapter on Immunity with a very good discussion of Serum and Vaccine Therapy. The laboratory work is so arranged that the student may grasp the underlying principles without a lot of unnecessary technicality.

A Textbook of Histology. By Harvey E. Jordan. 5th Edition. Pp. 857. Published by D. Appleton & Co.

A standard work such as Jordan's needs but little comment to re-introduce it to the readers of the *Journal*. This is one of the best established and most complete of the histological texts. In this edition the usual standard of excellence has been maintained and the recent additions to our histological knowledge, particularly of the blood cells and the endocrine glands, have been incorporated. The illustrations are adequate and technically good.